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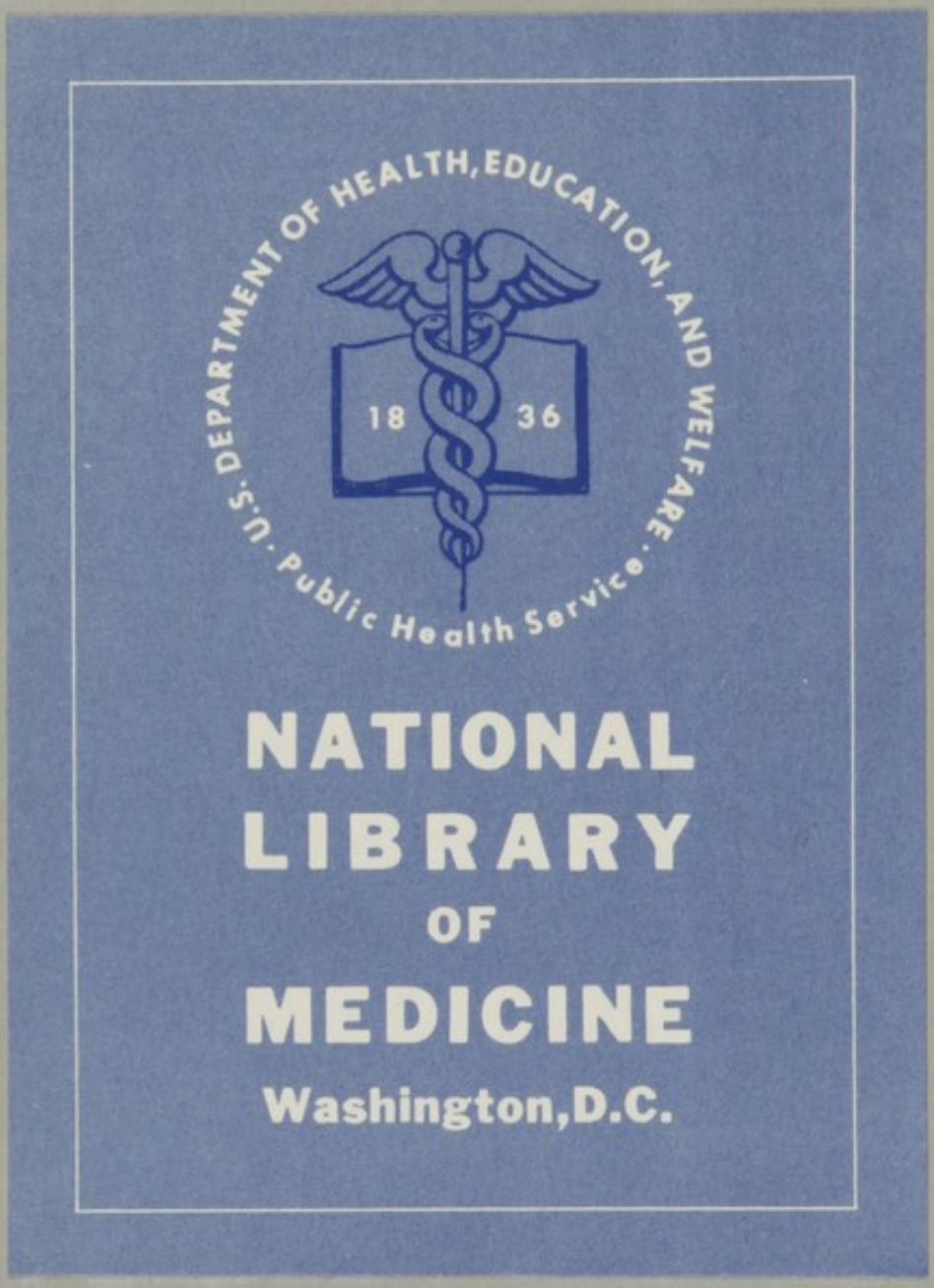
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THE

MODERN
PRACTICE OF PHYSIC,

EXHIBITING THE

CHARACTER, CAUSES, SYMPTOMS,

PROGNOSTICS, MORBID APPEARANCES,

AND

IMPROVED METHOD OF TREATING

THE

DISEASES OF ALL CLIMATES.

BY

ROBERT THOMAS, M. D.

AN HONORARY MEMBER OF THE LITERARY, HISTORICAL, AND PHILOSOPHICAL SOCIETIES OF NEW-YORK.

EIGHTH AMERICAN FROM THE LAST LONDON EDITION,

REVISED, AND CONSIDERABLY ENLARGED BY AN ADDITION OF MUCH NEW AND IMPORTANT MATTER; THE PRESCRIPTIONS HAVING BEEN ALTERED IN CONFORMITY TO THE LAST PHARMACOPŒIA OF THE LONDON COLLEGE OF PHYSICIANS.

JAN 15-1902
178429

WITH AN APPENDIX

BY DAVID HOSACK, M. D. LL. D.

PROFESSOR OF THE THEORY AND PRACTICE OF PHYSIC AND CLINICAL MEDICINE IN THE UNIVERSITY OF NEW-YORK; AND ONE OF THE PHYSICIANS OF THE NEW-YORK HOSPITAL.

NEW-YORK:

PUBLISHED BY S. B. COLLINS, AND COLLINS & CO.

1825.

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1825

CATALOGUED.
E. J. C.

Southern District of New-York, ss.

BE IT REMEMBERED, That on the eighteenth day of November, in the fiftieth year of the Independence of the United States of America, Collins & Co. of the said District, have deposited in this office the title of a Book, the right whereof they claim as proprietors, in the words following, to wit :

"The Modern Practice of Physic, exhibiting the Character, Causes, Symptoms, Prognostics, Morbid Appearances, and Improved Method of Treating the Diseases of all Climates. By Robert Thomas. M. D. an Honorary Member of the Literary, Historical, and Philosophical Societies of New-York. Eighth American from the last London Edition, revised, and considerably enlarged by an addition of much new and important matter; the Prescriptions having been altered in conformity to the last Pharmacopœia of the London College of Physicians. With an Appendix, by David Hosack, M. D. LL. D. Professor of the Theory and Practice of Physic and Clinical Medicine in the University of New-York; and one of the Physicians of the New-York Hospital,"

In conformity to the Act of Congress of the United States, entitled. "An Act for the encouragement of Learning, by securing the copies of Maps, Charts, and Books, to the authors and proprietors of such copies, during the times therein mentioned." And also to an Act, entitled "an Act, supplementary to an Act, entitled an Act for the encouragement of Learning, by securing the copies of Maps, Charts, and Books, to the authors and proprietors of such copies, during the times therein mentioned, and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

JAMES DILL,
Clerk of the Southern District of New York.

TO

DAVID HOSACK, M. D. F. R. S. L. & E.

PROFESSOR OF THE THEORY AND PRACTICE OF PHYSIC

AND CLINICAL MEDICINE,

IN THE

UNIVERSITY OF THE STATE OF NEW-YORK,

THIS WORK

IS MOST RESPECTFULLY DEDICATED,

IN TESTIMONY OF THE VERY GREAT ESTEEM

AND REGARD OF

THE AUTHOR.

PREFACE

TO THE EIGHTH AMERICAN EDITION.

The present edition of the Modern Practice of Physic, in which the integrity of the London copy has been faithfully preserved, will be found to contain several valuable additions by its author, and in the Appendix some alterations and additional articles by the American editor.

Upon the merits of a work of so high reputation, and such general circulation, it is not necessary here to enlarge; nor is it at all required to notice the cavils of obscure and pensioned writers to its disparagement.

This production, if we except the more elaborate and learned work of Dr. Good, has been declared both in Britain and America by the public approbation, the best manual for the practice of physic of any treatise extant: and it is believed will outlive the attacks of salaried reviewers and *sedentary* practitioners.

DAVID HOSACK.

New-York, Nov. 17th, 1825.

PREFACE.

The reception which this work has met with from every branch of the medical Profession, and indeed from the public at large, merits my most grateful acknowledgments; and as the best way of expressing them, I have endeavoured to render it still more useful by collecting from every valuable source whatever was likely to prove serviceable, and thereby enable it to maintain its claim to a continuance of that approbation with which the seven former editions have been so eminently distinguished. The eighth is now laid before them; and it will be found to contain such an addition of important matter, as I trust will keep the spirit of the work on a level with the improvements which are annually taking place in the science of medicine.

The doctrines and observations contained in it are grounded on a practice of fifty years in different climates, after a study of several years at the Edinburgh University during the zenith of its reputation, and when it numbered the elder Dr. Munro, Dr. Cullen, Dr. Black, and Dr. Gregory, among its professors; assisted by an attentive perusal of the works of all modern writers of eminence, and notes carefully taken of any particular cases which have fallen under my own care.

As in the former editions, the diseases are divided into the following classes, viz. Pyrexiæ, or Febrile Diseases; Neuroses, or Nervous Diseases; Cachexiæ, or Diseases connected with a general bad Habit of Body; Locales,

or Diseases only affecting Parts; those not referrible to any particular class; the Diseases of the Pregnant and Parturient States, and those of Infancy: and although this arrangement is by no means perfect or unobjectionable, (indeed all the systems of nosology yet published have important defects, and are imperfect,) still it may be sufficient to answer every useful purpose.

The necessity of studying nosology and teaching medicine upon a nosological plan, has indeed been objected to by some professional men; but this can only have arisen from an imperfect acquaintance with its nature and tendency, and a consequent inadequate estimate of its utility. It is necessary, in my opinion, that every Practitioner should be enabled to distinguish diseases by their symptoms or signs, if he would hope to cure them by appropriate remedies. He must therefore possess in his mind an arrangement of the characteristic symptoms of every disease, and especially of those by which one disease may be distinguished from other diseases which resemble it, or with which it has several symptoms in common.

The new nomenclature in conformity to the Pharmacopœia of the London College of Physicians lately published, has been adopted throughout the different prescriptions, and a table of the synonyms of the different colleges of London, Edinburgh, and Dublin, has been annexed, which cannot but be considered as a valuable addition to the work.

To be able to arrest the progress of contagious diseases must be a very desirable object; and therefore those means which have been found most effectual not only for this purpose, but for totally annihilating every kind of contagion, have been pointed out under the several heads of the different species of Typhus, Scarlatina, Cynanche Maligna, Variola, Pestis, and Dysenteria.

The best means for preserving the health of Europeans in warm climates, and of sailors on shipboard, have also been noticed; and as both cold and warm bathing, as well as many mineral waters, may be regarded as useful auxiliaries in the cure of some disorders, their different qualities and virtues have been specified.

Such is the nature of this work; and I trust it will be found a tolerably accurate compendium of the present state of medical practice, from which the young Practitioner may derive both information and instruction, while it may also prove a serviceable reference occasionally to those of longer standing in the Profession. In cases of emergency, it may likewise serve as a guide to other persons, who on any sudden or violent attack of illness, either in their own families or those of the neighbouring poor, might find it necessary to administer some appropriate remedy in the interval of their obtaining professional assistance.

About two years ago, I submitted to the public a work on Domestic Medicine, wholly divested of all professional terms, and chiefly intended for the use of families, managers of plantations and factories in our colonies abroad, and masters of ships not having any medical Practitioner on board, which I trust will prove of as high utility to those for whom it is designed, as the present work has done to those engaged in the practice of medicine.

Besides giving the treatment of the diseases incidental in both cold and warm climates to men, women, and children, it points out the steps to be adopted for preventing the further extension of such as are of a contagious nature, as also the means for preserving health, and prolonging human life to an advanced age. Since the appearance of this Publication it has been noticed by several of the Reviewers, and has been pretty gene-

rally admitted by them to be the best work on Domestic Medicine yet submitted to popular readers.

I think it necessary to state, that the doses advised in the various prescriptions in the present work are intended for adults, except where particularly specified for infants or children; and that, in general, women require a smaller quantity of medicine to produce a desired effect than men, and those of a sanguine temperament, less than those of the melancholic. In regulating the doses, due consideration ought therefore to be paid to the sex, temperament, habit, idiosyncrasy, and disease of the patient, as no correct general rule can be laid down.

It would be ungrateful in me not to express my warmest acknowledgments to Dr. Hosack of New-York, for his exertions to extend the usefulness of the Modern Practice of Physic, not only by recommending it to his pupils as professor of the Theory and Practice of Physic and Clinical Medicine in the University of that State; but by the many valuable observations in the appendix which he has added to the different editions, seven in number, that have been published under his sanction, and which have rendered the work more complete, and better adapted to the climate and constitution of the inhabitants of the different States of North America.

It is incumbent on me to return my best thanks to Dr. Goven, late of the Lunatic Asylum of Charenton in France, for the honour done me by his translation of this work into the French language, the knowledge of which I obtained through the medium of Letters from the Continent during a Tour through France in 1818, published in the Gentleman's Magazine for July 1820.

ROBERT THOMAS.

Salisbury, January 12, 1825.

A SYSTEMATIC ARRANGEMENT

OF

THE DISEASES

INTO

CLASSES AND ORDERS;

TOGETHER WITH

AN EXPLANATION AND DERIVATION OF THEIR NAMES.

CLASS I.

PYREXIÆ (FEBRILE DISEASES) from πυρ, fire, and ἕξις, habit.

ORDER I.

FEBRES or FEVERS, from *ferbeo*, to be hot.
Febris Intermittens (*Intermittent Fever.*)
Febris Remittens (*Remittent Fever.*)
Synochus (*Simple Continued Fever,*) from συνεχω, to continue.
Synocha (*Inflammatory Fever,*) from ditto.
Typhus Mitior (*Low or Nervous Fever,*) from τυφος, stupor. By some it is supposed to be derived from τυφω, to inflame.
———Gravior (*Malignant or Putrid Fever,*) from ditto.
———Icterodes (*Yellow Fever,*) from τυφος, and ικτερος, icterus.

ORDER II.

PHLEGMASIÆ (*Inflammations*), from φλεγω, to burn.
Phlegmon (*Phlegmonous Inflammation*).
Erysipelas (*Erysipelatous ditto*), from ερυω, to draw, and πελας, adjoining; named from the neighbouring parts being affected by the eruption.
Phrenitis (*Inflammation of the Brain and its Membranes*), from φρενιτις, a frenzy or distraction.
Ophthalmia (*Ditto of the Eye*), from οφθαλμος, the eye.
Otitis (————*Ear*), from ους, the ear.
Cynanche Tonsillaris (*Inflammatory Sore Throat*), from κυων, a dog, and ανχω, to suffocate.
————Parotidæa (*Mumps*).
————Maligna (*Putrid or Ulcerated Throat*).
————Trachealis (*Croup*).
————Pharyngæa (*Inflammation of the Pharynx.*)
————Laryngæa (———————*Larynx*).
Pleuritis (*Pleurisy*), from πλευρα, the membrane which lines the lungs.
Pneumonia (*Peripneumony*), from πνευμων, the lungs.
————Notha (*Spurious Peripneumony*).
Gastritis (*Inflammation of the Stomach*), from γαστηρ, the stomach.
Enteritis (————————*Intestines*), from εντερον, an intestine.
Hepatitis (————————*Liver*), from ἧπαρ, the liver.
Splenitis (————————*Spleen*), from σπλην, the spleen.
Nephritis (————————*Kidney*), from νεφρος, the kidney.
Cystitis (————————*Bladder*), from κυστις, a bag or bladder.

Podagra (*Gout*), from πους, the foot, and αγρα, a seizure.
Rheumatismus (*Rheumatism*), from ρευματιζω, to be afflicted with defluxions.

ORDER III.

Exanthemata (*Eruptive Fevers*), from εξανθεω, to effloresce.
Variola (the *Small-pox*), from *varius*, changing colour, and the skin being disfigured.
Variolæ Vaccinæ (*Cow-pox*).
Varicella (*Chicken-pox*), the word being a diminutive of *varia*.
Rubeola (the *Measles*), from *rubeo*, to become red.
Scarlatina (*Scarlet Fever*), from *scarlato* (Ital.) a lively red.
Pestis (*Plague*).
Miliaris (*Miliary Fever*), from *milium*, the millet.
Pemphigus (*Vesicular Eruption*), from πεμφιξ, a pustule.
Urticaria (*Nettle Rash*), from *urtica*, a nettle.

ORDER IV.

Hemorrhagiæ (*Involuntary Discharges of Blood*), from αιμορραγεω, to throw out blood, from αιμα, blood, and ῥεω, to flow.
Epistaxis (*Hemorrhage from the Nose*), from επισταζω, to distil.
Hæmoptysis (*Spitting of Blood*), from αιμα, blood, and πτυω, to spit.
Hæmatemesis (*Vomiting of Blood*), from αιμα, blood, and εμεω, to vomit.
Hæmaturia (*Bloody Urine*), from αιμα, blood, and ὀυρον, urine.
Menorrhagia (*Immoderate flow of the Menses*), from μηνια, the menses, and ῥηγνυμι, to break out.
Hæmorrhois (*Piles*), from αιμα, blood, and ῥεω, to flow.

ORDER V.

Profluvia (*Fluxes with Pyrexia*), from *profluo*, to run down.
Catarrhus (*Catarrh*), from καταῤῥεω, to flow down.
Dysenteria (*Dysentary*), from δυς, bad, ενετον, the intestine, and ῥεω, to flow.

CLASS II.

NEUROSES (Nervous Diseases), from νευρον, a nerve.

ORDER I.

Comata (*Soporose Diseases*), from κωμα, a propensity to sleep.
Apoplexia (*Apoplexy*), from απο and πλησσω, to strike down.
Paralysis (*Palsy*), from παραλυω, to loose.

ORDER II.

Adynamiæ (*Defect of Vital Powers*), from α, privative, and δυναμις, power.
Syncope (*Fainting*), from συν, with, and κοπτω, to strike down.
Vertigo (*Giddiness*).
Dyspepsia (*Indigestion*), from δυς, bad, and πεπτω, to concoct.
Hypochondriasis (*Hypochondriac Affections*), from υποχονδριακος, one who is hipped.

ORDER III.

Spasmi (*Spasmodic Diseases*), from σπαω, to draw.
Hysteria (*Hysteric Diseases*), from ὑστερα, the womb.

Epilepsia (*Epilepsy*), from επιλαμβανω, to seize upon, so named from the suddenness of its attack.
Chorea Sancti Viti (*St. Vitus's Dance*), from χορεια, a dance.
Risus Sardonicus (*Sardonic, or Convulsive Laughter*).
Tetanus (*Cramp*), from τεινω, to stretch.
Singultus (*Hiccup, or Convulsive motion of the Diaphragm and Stomach.*)
Pertussis (*Hooping Cough*), from *per*, much, and *tussis*, cough.
Pyrosis (*Water Brash*), from πυρωσις, a burning.
Agina Pectoris, vel Syncope Anginosa.
Palpitatio (*Palpitation of the Heart*).
Asthma (*Asthma*), from ασθμαζω, to breathe with difficulty.
Hydrophobia (*Canine Madness*), from υδωρ, water, and φοβεω, to dread.
Colica (*Colic*), from κωλον, the colon, one of the large intestines.
Colica Pictonum (*Dry Belly Ache, or Devonshire Colic*).
Cholera Morbus (*Vomiting and Purging*), from χολη, bile, and ῥεω, to flow.
Diarrhœa (*Purging*), from διαῤῥεω, to flow through.
Diabetes (*Excessive Discharge of Urine*), from δια, through, and βαινω, to pass.

ORDER IV.

Vesaniæ (*Mental Diseases*), from *vesania*, madness.
Mania (*Madness*), from μαινομαι, to rage.
Incubus (*Night-mare*).

CLASS III.

CACHEXIÆ (*Cachectic Diseases*), from κακος, bad, and εξις, a habit.

ORDER I.

Marcores (*Universal Emaciation*), from *marceo*, to become thin.
Atrophia (*Atrophy*), from α, priv. and τροφη, nutrition.
Phthisis (*Pulmonary Consumption*), from φθιω, to consume or waste.
Cachexia Africana (*Negro Cachexy*).
Aphtha Chronica (*Chronic Thrush*), from απτω, to inflame.

ORDER II.

Intumescentiæ (*General Swellings*), from *intumesco*, to swell.
Polysarchia (*Corpulency*), from πολυς, much, and σαρξ, flesh.
Emphysema (*Emphysema*), from εμφυσαω, to inflate.
Tympanites (Tympany), from τυμπανιζω, to sound like a drum.
Hydrops (*Dropsy*), from ὑδωρ, water.
Anasarca (*Dropsy of the Cellular Membrane*), from ανα, along, and σαρξ, flesh.
Ascites (*Dropsy of the Belly*), from ασκος, a sack.
———Ovarii (*Dropsy of the Ovarium*).
Hydatids (*Water contained in Membraneous Bags*), from ὑδατις, a bladder.
Hydrocele (*Dropsy of the Tunica Vaginalis Testis*), from ὑδωρ, water, and κηλη, a swelling.
Hydrocephalus (*Dropsy in the Head*), from ὑδωρ, water, and κεφαλη, the head.
Hydro-thorax (*Dropsy of the Chest*), from ὑδωρ, water, and θωραξ, the chest.
Rachitis (*Rickets*), from ραχις, the spine of the back, which is very frequently affected in this disease

ORDER III.

Impetigines (*Cutaneous Diseases*), from *in*, and *petigo*, a scab.
Scrofula (*Scrofula, or King's Evil*), from *scrofula*, a swine, because this animal is said to be subject to a similar disorder.
Mesenterii Glandulæ Morbosæ (*Diseased Mesenteric Glands*).
Syphilis (*Venereal Disease*), from σιφλος, filthy.
Sibbens, or Sivvens.
Frambœsia (*Yaws*), from *framboise*, the French for a rasberry.
Elephantiasis (*Leg swelled like an Elephant's*), from ελεφας, an elephant.
Lepra (*Leprosy*), from λεπις, a scale.
Plica Polonica (*Plaited Hair*), from *plico*, to entangle.
Scorbutus (*Scurvy*), from *shorbact* (Germ.), scurvy.
Icterus (*Jaundice*), from ικτερος, the jaundice.

CLASS IV.

LOCALES (*Local Diseases*), from *locus*, a place.

ORDER I.

Dysæsthesiæ (*Diseases of the Senses*), from δυς, bad, and αισθησι, feeling.
Nyctalopia (*Night Blindness*), from νυξ, the night, and ωψ, an eye.
Amaurosis, or Gutta Serena, from αμαυρωσις, obscurity.
Paracusis (*Deafness*), from παρα, wrong, and ακεω, to hear.

ORDER II.

Increased Appetite.

Dysorexiæ (*Depraved Appetites*), from δυς, bad, and ορεξις, appetite.
Bulimia (*Canine Appetite*), from βους, an ox, and λιμος, hunger.
Furor Uterinus, or Nymphomania (*Uncontrollable desire of Venery in Women*), from νυμφα, a nymph, and μανια, madness.

Defective Appetite.

Anorexia (*Loss of Appetite*), from α, priv. and ορεξις, appetite.
Anaphrodisia (*Impotence*), from α, priv. and φρωδισια, venery.

ORDER III.

Dyscinesiæ (*Motion impeded or depraved from an imperfection of the Organ*), from δυς, bad, and κινεω, to move.
Strabismus, (*Squinting*), from στραβιζω, to squint.

ORDER IV.

Apocenoses (*Increased Discharges*), from απο, and κενοω, to evacuate.
Ephidrosis (*Violent and Morbid Perspiration*), from εφιδροω, to perspire.
Eneuresis (*Incontinence of Urine*), from ενουρεω, to be unable to retain urine.
Gonorrhœa Dormientium (*Involuntary Emission of Semen during Sleep,*) from γονη, semen, and ῥεω, to flow.
Leucorrhœa (*Whites*), from λευκος, white, and ῥεω, to flow.

ORDER V.

Epischeses (*Obstructions*), from επισχεσις, a suppression or retention.
Obstipatio (*Constipation or Costiveness*), from *obstipo*, to stop up.
Ischuria (*Suppression of Urine*), ισχω, to restrain, ουρον, the urine.

Dysuria (*Difficulty of voiding Urine*), from δυς, difficulty, and ερον, the urine.

Amenorrhœa (*Partial or total Obstruction of the Menses from other Causes than Pregnancy*), from α, priv. μην, month, and ῥεω, to flow.

Chlorosis (*Retention of the Menses, or Green Sickness*), from χλωριζοω, to look green.

Mensium Suppressio (*Suppressed Menses*).

Menorrhagia Difficilis (*Difficult and painful Menstruation*), from μην, a month, and ῥηγνυμι, to break out.

ORDER VI.

Tumores (*Tumours*), from *tumeo*, to swell.

Carcinoma (*Cancer*), so named from the tumours exhibiting blue veins like crabs' claws.

Fungus Hæmatodes (*Medullary Sarcoma*), from σφογγος, a sponge, and αιμα, blood.

Bronchocele (*Derbyshire Neck*), from βρονχος, the windpipe, and κηλη, a tumour.

Dracunculus (*Guinea Worm*).

ORDER VII.

Dolorosi (*Painful Affections, unaccompanied by Pyrexia*).

Cephalalgia (*Headach*), from κεφαλη, the head, and αλγος, pain,

Odontalgia (*Toothach*), from οδους, a tooth, αλγος, and pain.

Faciei Morbus Nervorum Crucians (*Tic Douloureux, or Painful Affection of the Nerves of the Face*).

Gastrodynia (*Pain in the Stomach*), from γαστηρ, the stomach, and οδυνη, pain.

Luxation (*Sprain*), from *luxo*, to loosen or displace.

Calculus (*Stone in the Bladder and Gravel*).

ORDER VIII.

Dialyses (*Solutions, or Discontinuity of Parts*), from διαλυω, to dissolve.

Ulcus (*Ulcer*), from ελκος, a sore.

Vulnus ex Ustione factum (*Scalds and Burns*), from *vulnus*, a wound.

Herpes (*Tetters*), from ἑρπω, to creep.

Tinea Capitis (*Scald Head*), from *teneo*, to hold.

Psora (*Itch*), from ψωρα, the itch.

Impetigo (*Ring-worm*), from *impeto*, to infest.

Acne (*Blotched and pimpled Face*), from αχνη, chaff.

Chigre (*an Insect resembling a Flea*).

Pernio (*Chilblain*).

DISEASES NOT REFFERIBLE TO ANY PARTICULAR CLASS.

Vermes (*Worms*).

Venena (*Poisons*).

Animatio Suspensa (*Suspended Animation*).

Gelatus (*Frost-bitten*).

DISEASES OF THE PREGNANT STATE.

Convulsiones (*Convulsions*), from *convello*, to rend.

Abortio (*Abortions and Floodings*), from *aborior*, to be sterile.

DISEASES OF THE PUERPERAL STATE.

Lochia (*Discharge after Labour*), from λοχευω, to bring forth.
Febris Lactea (*Milk Fever*).
Inflammatio Mammæ (*Tumour and Inflammation of the Breast*).
Papillæ Excoriatæ (*Excoriated Nipples*).
Eruptiones Miliariæ (*Miliary Eruptions*).
Phlegmasia Dolens (*Painful Intumescence of the lower Extremity*), from φλεγω, to burn.
Hysteritis (*Inflammation of the Womb*), from ὑστερα, the womb.
Peritonitis (*Inflammation of the Peritonæum*), from περιτεινω, to stretch round.
Febris Puerperarum (*Puerperal or Child-bed Fever*).
Inversio Uteri.
Prolapsus Uteri.

DISEASES OF INFANTS.

Asphyxia (*Apparent Cessation of Life*), from α, priv. and σφυξις, the pulse.
Infantum Color Lividus (*Black and livid Colour of new-born Children*).
Meconii Retentio (*Retention of the Meconium*).
Icterus Infantum (*Yellow Gum*).
Excoriationes et Ulcerationes (*Excoriations and Ulcerations*).
Singultus (*Hiccups*).
Erysipelas Infantile (*Infantile Erysipelas*)
Eruptiones (*Eruptions*).
Tormina (*Gripes from Acidities and Flatulency*).
Vomitus (*Vomiting*).
Diarrhœa (*Purging*).
Trismus (*Locked Jaw*).
Febris Remittens (*Remittent Fever*).
Aphthæ (*Thrush*).
Prolapsus Ani (*Falling of the Fundament*).
Atrophia Ablactatorum (*Weaning Brash*).
Ophthalmia Purulenta (*Purulent Inflammation of the Eyes*).
Dentitio (*Teething*).
Convulsiones.
Syphilis.

A TABLE

OF

THE WEIGHTS AND MEASURES

USED BY APOTHECARIES.

Weights.

The Pound	℔	Contains	Twelve Ounces.
— Ounce	℥		Eight Drachms.
— Drachm	ʒ		Three Scruples.
— Scruple	℈		Twenty Grains.
— Grain	gr.		

These, and the Signs by which they are denoted, are the same in all the British Pharmacopœiæ.

Measure of Fluids.

The Gallon	Cong.	Contains	Eight Pints.
—Pint (Octarius) ...	O.		Sixteen fluid Ounces.
—Fluid Ounce	f℥		Eight fluid Drachms.
—Fluid Drachm	fʒ		Sixty Minims.
—Minim	♏		

The value of these Measures is the same in all the Pharmacopœiæ, but the signs by which they are denoted are peculiar to the London. The Edinburgh and Dublin retain the old signs, which are, for the gallon, cong.; the pint, ℔.; the ounce, ℥; the drachm, ʒ; and the drop, gt.

On account of the uncertainty of the dose of any medicine of a liquid nature, when regulated by the dropping of it from a bottle, (much depending on the size of the phial, as likewise on the quality of the fluid contained in it,) the Physicians of the London College have directed in their Pharmacopœiæ, the minim to be substituted for the drop. The minim and gutta of any aqueous fluid proceeding from the mouth of the graduated measure, may be considered, indeed, as nearly equal; but with respect to vinous and spiritous tinctures, there will be a considerable difference, as ten minims of either of these will at least amount to fifteen or sixteen drops. In administering active medicines, such, for instance, as the tinctura opii and the like, the difference between the minim and gutta is of high importance, and should be attended to.

The signs of the London Pharmacopœiæ have been adopted in the different Latin formulæ throughout this work; but in the translated copies, for the convenience of those who are not of the profession, and who may not possess the graduated measure, the drop has been substituted for the minim, attention having been paid at the same time to their relative proportions.

PRACTICE OF PHYSIC.

CLASS I.

PYREXIÆ, OR FEBRILE DISEASES.

THE character assigned to this class of diseases is, increased heat and frequency of the pulse, after a shivering, accompanied with a disturbance in many of the functions, and diminution of strength, especially in the limbs.

ORDER I.

FEBRES, OR FEVERS.

IT is impossible to give a concise and proper definition of the disease known by the name of fever, as it has no symptom invariably attendant on it, which can point out its real nature or essence. The pulse is exceedingly various in such cases: it may be small, weak, slow, contracted, and unequal; or it may be strong, quick, full, and regular; hard or soft, according as the fever is at the commencement, increase, height, or in the remission and termination; or as the genus and nature of the fever may chance to differ. So, also, the heat may be equally diffused, or confined to particular parts: sometimes the external parts are cold, with a sense of internal heat; at others, there is general heat or cold over the body; and sometimes the heat is not greater than what is natural. Sometimes the face is pale, and at others it is red or swelled; now it has the natural look, and now the reverse of this. The eyes are heavy, languid, and sad; or red, and impatient of light; they are prominent, distorted, or wild; shining, dull, or ghastly; sometimes bedewed with tears, and deprived of their usual lustre. The tongue is generally dry, chapped, scabrous, red, white, or variegated; often covered with mucus; but not unfrequently moist and natural, without any thirst. The breathing is frequent, hot, unequal, or impeded; the breath is often offensive. The appetite is usually extinct; but, in a few instances, some desire for food remains. Sometimes the urine is crude and watery; at others, red and thin; or often thick, soon becoming turbid, and depositing a sediment; sometimes it is of a natural appearance. To these symptoms are added, pains in different parts of the body; depression of strength, and watchfulness; or, on the other hand, heaviness, stupor, or imbecility of mind,

delirium, diarrhœa, or constipation, vomiting, tension of the hypochondria, subsultus tendinum, emaciation, and other affections arising with the fever itself, or gradually supervening to it.

Besides the ordinary febrile symptoms of hot skin, irritated circulation, foulness of the tongue, thirst, and deficient or irregular secretions, preceded by lassitude, heaviness, listlessness, and rigors, there are pains in the head, generally of the throbbing kind, and extending along the continuation of that portion of the brain which is lodged in the channel of the spine; increased heat of the head (easily perceived on compressing it with the hands), even though the body and extremities be cold; unusual throbbing of the arteries in the temples and neck; suffusion of the eyes, and an altered expression of features, easily observed, but difficult to be described, together with disturbance of all the functions immediately belonging to the brain. If to these be added irregularity in regard to sleep, and watching, which, though common to many diseases, belongs, in a peculiar manner, to the one under our investigation, we shall have characters always sufficient to enable us to detect the presence of fever in the system, and affording at the same time the clearest indications of its nature.

It is only from a diligent examination of these appearances conjoined together, that we are enabled to judge of the presence or absence of fever; not from any of them taken singly. By making a general assemblage of the symptoms, we may venture to call it a disease which affects the whole system, the head, trunk of the body, and extremities; the skin, muscular fibres, and membranes; the circulation, absorption, and nervous system, the body, and likewise the mind. It does not, however, affect the various parts of the system uniformly and equally; but on the contrary, one part is much more affected than another.*

Fevers are usually divided into intermittents, remittents, and continued, on account of their taking up different times in their natural duration; some being compounded of a number of paroxysms, following each other in a regular succession, at a certain distance of time, as happens in intermittents; in others, a fresh paroxysm comes on, immediately on the crisis of the former, so as hardly to leave the patient entirely free of fever, as happens in remittents; and in others, there is such a quick succession of paroxysms, that the one comes on before there is any visible abatement of the febrile symptoms, as in continued fevers.

In some instances of the last mentioned fever, the remissions and exacerbations are so inconsiderable, as not easily to be perceived, which has induced a few practitioners to conclude, that there is a species of fever which subsists for several days together, and which is composed only of a single paroxysm: but we may safely presume, that no such fever ever existed; on the contrary,

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* See Dissertation on Fever, by Dr. George Fordyce.

we may be well assured, that every continued fever consists of a repetition of paroxysms, in the manner just mentioned.

Now and then we meet with a fever consisting of only a single paroxysm, and which goes through its course in a few hours, as in the ephemera simplex; but this does not very frequently occur.

Continued fevers usually last nearly of the same violence for several days, there being commonly an exacerbation in the evening, and a remission towards morning. The fevers of this species have been noticed to be of great diversity, by ancient nosologists; but modern ones have limited them, very properly, either as they show an inflammatory irritation, or as they point out an affection of the nervous system, and in which the powers of sense and motion are particularly impaired. The distinctions of inflammatory and nervous fevers are, therefore, those now generally made use of; the former being known by the title of synocha, and the latter by that of typhus. A combination of these two genera seems, however, to be that form of continued fever which is most prevalent in this climate; and this I shall treat of under the appellation of simple continued fever, or synochus.

A variety of continued fever has been noticed by some physicians under the title of synochus biliosa, where, in addition to the other febrile symptoms, we meet with a redundant secretion and vitiated state of the bile, giving rise to a vomiting of dark green matter, or diarrhœa, and excited by an exposure to extreme heat of weather. In some cases, however, the bowels are very torpid, and the motions procured even by purgatives are of a hard consistence, and dark as pitch; but as this variety of fever seldom appears under a continued type, and rather assumes a remittent form, it ought, undoubtedly, to be considered as a remittent.

Several species are comprehended under the head of typhus: they do not, however, imply any specific difference, but seem to arise either from a different degree of power in the cause; from different circumstances of the climate or season in which they happen; from some peculiarity in the constitution of the person affected; or from a peculiar state of the fluids predisposing to putrescency.

As hectic fever cannot be considered as an idiopathic disease, but merely as a symptom of some other, and of phthisis in particular, it is not noticed under a distinct head, but under that of pulmonary consumption.

FEBRES INTERMITTENTES, OR INTERMITTENT FEVERS.

THE title of intermittent is applied to that kind of fever which consists of a succession of paroxysms, between each of which there is a distinct and perfect intermission from febrile symptoms, or an apyrexial period.

Different names have been applied to this fever, according to the distance of time observed between the periods of its return. When

it comes on within the space of every twenty-four hours, it is called a quotidian; when it returns every other day, or there is a space of forty-eight hours between its attacks, it is called a tertian; and when it attends on the first and fourth day, with an interval of seventy-two hours, it is named a quartan. That under the tertian type is most apt to prevail in the spring, and is, indeed, the most frequent form of the disease. The quartan is the most obstinate and dangerous, being chiefly prevalent in autumn. The quotidian is more likely than the others to assume the continued type.

Of the quotidian, tertian, and quartan intermittents, there are several varieties and forms: as the double tertian, having a paroxysm every day with the alternate paroxysms similar to one another. The double tertian, with two paroxysms on one day, and another on the next. The double quartan, with two paroxysms on the first day, none on the second and third, and two again on the fourth day. The double quartan, with a paroxysm on the first day, another on the second, but none on the third. The triple quartan, with three paroxysms every fourth day. The triple quartan, with a paroxysm every day, every fourth paroxysm being similar.

When these fevers arise in the spring of the year, they are called vernal; and when in autumn, they are known by the name of autumnal. Intermittents often prove obstinate, and are of long duration, in warm climates; and they not unfrequently resist every mode of cure, so as to become very distressing to the patient, and often give rise to other chronic complaints, but more particularly anasarcous swellings, and an enlargement of the liver, or spleen.

It seems to be pretty generally acknowledged, that marsh miasma, or the effluvia arising from stagnant water, or marshy ground, when acted upon by heat, are the most frequent exciting cause of this fever. In marshes the putrefaction of both vegetable and animal matter is always going forward, it is to be presumed; and hence it has been generally conjectured, that vegetable or animal putrefaction imparted a peculiar quality to the watery particles of the effluvia arising from thence. We are not yet acquainted with all the circumstances which are requisite to render marsh miasma productive of intermittents. According to the observations made in the fenny districts of this kingdom, it has been ascertained, that marsh miasma, when much diluted with aqueous exhalation, as in summers where an unusual quantity of rain has fallen, are nearly inert; but when arising from stagnant waters of a concentrated foulness, in consequence of great drought and heat in the latter end of summer and the early part of autumn, they act with great violence and malignancy.

In admitting the powers of marsh effluvia to produce intermittents, we ought not, at the same time, to look on them as their universal cause, since it is found that persons residing constantly in the most healthy part of cities, and far remote from marshes, are sometimes attacked by them.

The testimony of unquestionable writers, proves that febrific miasma may arise, under certain conditions, from almost any soil; and what is still more extraordinary, that these febrific miasma may be wafted by currents of air* to a distance far exceeding what has been supposed or admitted upon this subject.

By some physicians, the heavenly bodies have been supposed to have a considerable influence on intermittent fevers, particularly in warm climates. Dr. Lind mentions, that eight seamen were seized with a return of their fevers exactly at the moment of the beginning of an eclipse; and others have cited cases where people have been seized with intermittents at the full and change of the moon. Many of these observations have, however, on a more particular scrutiny, been referred to the tides, which, in warm climates, sometimes rise to a prodigious height at the new and full moon, and leave a great extent of marshy ground, the exhalations from which produce the disease; and it has been found, that by removing to a proper distance from these, the disorder was prevented, although the influence of the moon remained the same.

People in warm climates usually take their exercise very early in the morning, but frequently in the evening, being prevented in the day by the excessive heat: the cool and damp air, to which they are thereby exposed, often produces fevers, which have absurdly been attributed to the influence of the moon. A similar explanation may be given of the influence which the winds are said to have on fevers. In some marshy countries they produce intermittents when they blow over the marshes, and cease to spread when the wind changes its direction.

A watery, poor diet, great fatigue, long watching, intemperance, grief, much anxiety, debility, exposure to cold, lying in damp rooms or beds, wearing damp linen, a warm, moist, or cold damp atmosphere, the suppression of some long-accustomed evacuation, the recession of eruptions and preceding disease, have been ranked among the exciting causes of intermittents; but it is more reasonable to suppose that these circumstances act only by inducing that state of the body which predisposes to these complaints. By some it has been imagined, that an intermittent fever may be communicated by contagion; but this supposition is by no means consistent with general observation.

One peculiarity in this fever is, its great susceptibility of a renewal from very slight causes, as from the prevalence of an easterly wind, or from the repetition of the original exciting cause. It would appear likewise, that a predisposition is left in the habit, which favours the recurrence of the complaint. In this circumstance, intermittents differ from most other fevers, as it is well known, that after a continued fever has once occurred, and been completely removed, the person so affected is by no means so

* See Report of the Epidemic Fever, in the years 1809—10—11, by the Committee of Physicians appointed by the Madras Government.

liable to a fresh attack of the disorder, as one in whom it had never taken place.

We have not yet attained a certain knowledge of the proximate cause of an intermittent fever; but a deranged state of the stomach and primæ viæ is that which is most generally ascribed.

Each paroxysm of an intermittent fever is divided into three different stages, which are called the cold, the hot, and the sweating stages, or fits.

The cold stage commences with languor, a sense of debility, and sluggishness in motion, frequent yawning, and stretching, and an aversion to food. The face and extremities become pale, the features shrink, the bulk of every external part is diminished, and the skin over the whole body appears constricted, as if cold had been applied to it. At length the patient feels very cold, and universal rigors come on; the respiration is small, frequent, and anxious; the urine is almost colourless; sensibility is greatly impaired; and the pulse is small, frequent, and often irregular. In a few instances, drowsiness and stupor have prevailed in so high a degree, as to resemble coma, or apoplexy; but this is by no means usual.

These symptoms abating after a short time, the second stage commences with an increase of heat over the whole body, redness of the face, dryness of the skin, thirst, pain in the head, throbbing in the temples, anxiety and restlessness; the respiration is fuller and more free, but still frequent; the tongue is furred, and the pulse has become regular, hard, and full. If the attack has been very severe, then, perhaps, delirium will arise.

When these symptoms have continued for some time, a moisture breaks out on the forehead, and by degrees becomes a sweat, and this at length extends over the whole body. As this sweat continues to flow, the heat of the body abates, the thirst ceases, the urine deposits a sediment, respiration is free and full, and most of the functions are restored to their ordinary state: the patient is, however, left in a weak and wearied condition. This constitutes the third stage.

Having pointed out the phenomena usually attendant on a paroxysm of intermittent fever, and likewise their mode of succession, it may not be unworthy of observation to notice, that in different cases they may prevail in different degrees; that the series of them may be more or less complete; and that the several stages, in the time they occupy, may be in different proportions to one another.

After a specific interval, according to the species of ague, a fresh paroxysm commences, in the manner above described.

Such a depression of strength has been known to take place on the attack of an intermittent fever, as to cut off the patient at once; but an occurrence of this kind is very uncommon. Patients are seldom destroyed in intermittents, from general inflammation, or from a fulness of the vessels, either of the brain, or of the thoracic

viscera, as happens sometimes in a continued fever; but when their duration is of any length, they are apt to induce other complaints, such as loss of appetite, flatulency, scirrhus of the liver and spleen, dropsical swellings, and general debility, which, in the end, now and then prove fatal. In warm climates particularly, intermittents are very apt to terminate in this manner, if not speedily removed; and in some cases they degenerate into continued fevers.

When the paroxysms are of short duration, regular in their recurrence, and leave the intervals quite free, we may expect a speedy recovery; but when they are long, violent, and attended with much anxiety and delirium, the event may be doubtful. Other unfavourable symptoms are, great prostration of strength, vertigo, fœtid excretions, the presence of dysentery, cholera morbus, enlargements of the liver and spleen, inducing dropsy or jaundice, and convulsions occurring during the paroxysm preceded by coma. Relapses are very common to this fever, at the distance even of five or six months, or even a year; and autumnal intermittents are more difficult to remove than vernal ones.

Dissections of those who have died of an intermittent, show a morbid state of many of the viscera of the thorax and abdomen; but the liver, and organs concerned in the formation of bile, as likewise the spleen and mesentery, are those which are usually most affected.

The indications of cure in the treatment of intermittents, are, first, to put as speedy a stop as possible to the fit, when it has taken place; and, secondly, during the intermission to prevent its return, at the usual or any after period, both by exciting a new action in the system, by administering certain remedies at the commencement or immediately before the accession of the cold fit, thereby destroying the morbid concatenation induced by the cause of the disease, and by invigorating the body.

To effect the first of these intentions, it is proper to have recourse to warm diluent liquids, cordial diaphoretics,* fomentations or

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* 1. ℞ Misturæ Camphoræ, f. ℥xij.
Ammoniæ Subcarbon. gr. v.
Vini Antimon. Tart. ♏. x.
Syrup. Simpl. f. ℥j. M.
ft. Haustus, tertiis vel quartis horis sumendus.
Vel,
2. ℞ Potassæ Subcarbon, ℈j.
Succi Limon. q. s. ad saturationem.
Aq. Cinnam. f. ℥ij.
— Puræ, f. ℥j.
Antimon. Tartarizat. gr. $\frac{1}{8}$.
Syrup. Cort. Aurant. f. ℥j. M.
ft. Haustus.

* 1. Take Camphorated Mixture, twelve drachms.
Subcarbonate of Ammonia, five grains.
Wine of Tartarized Antimony, about fifteen drops.
Common Syrup, one drachm.
Mix them. One of these draughts is to be taken every three or four hours.
Or,
2. Take Subcarbonate of Potass, one scruple.
Lemon Juice, sufficient to saturate it.
Cinnamon Water, two drachms.
Pure Water, one ounce.
Tartarized Antimony, sixth of a grain.
Syrup of Orange Peel, 1 drachm.
Mix them for a draught.

bottles filled with hot water to the feet, pediluvium, or the more general remedy of a vapour bath. By putting the patient into a bath of this nature a quarter of an hour before the usual time of the coming on of the fever, and keeping him in it until the period of the cold stage has elapsed, has, in some cases, been found to effect a complete cure, even when he had before taken the cinchona bark in large doses without any good effect. These several remedies often failing, however, to put a stop to the fit, has induced practitioners to search after more powerful and certain remedies.—Doctor Trotter mentions, in his Medicina Nautica, that finding intermittents became very frequent on board the Vengeance, one of the channel fleet, under Earl Howe, he was resolved to try the full effects of opium in preventing the fit. He reports, the moment the sick felt the approach of an attack, they were sure to run to the cockpit for relief. A dose of tinctura opii was then administered: if the first dose did not bring on some warmth in the space of ten or fifteen minutes, from twelve to twenty drops more were given. He never gave less than thirty drops the first time, and never had occasion to go beyond sixty in the space of an hour: for in no case did the remedy fail, we are informed, to give relief in this time.

He further reports, that in a few minutes from the exhibition of the opiate, an exhilaration of spirits was perceived, which was quickly followed by a relaxation of the surface, the countenance looked cheerful, and a flush was spread on the cheek. The pulse from being weak, quick, and sometimes irregular, became less frequent, full, and equal; an agreeable warmth was diffused over the whole frame, and every unpleasant feeling vanished sometimes in a quarter of an hour. Sleep now and then followed a large dose; but this did not in general happen.

As soon as any symptoms indicated another paroxysm, whether on the following day or not, till the tertian interval, the tinctura opii was repeated in the same manner as in the former fit, and always with equal success; so that the patient seldom experienced much trembling or shaking. He adds, the second paroxysm was commonly an hour or two later in the day than the preceding one, and but few instances occurred where any indisposition indicated a third attack at the expected period of accession. The very patients themselves, he observes, were not a little surprised at the sudden change in their sensations by so small a quantity of medicine; and that they were certainly the completest cures which ever came under his observation.

A late writer tells us,* that he gave five grains of the subcarbonate of ammonia with an equal quantity of camphor, and a scruple of aromatic confection, in cases of Walcheren intermittents, with greater success than any other medicines. The confectio opii no

* See Observations on the Diseases of Walcheren, by G. Dawson.

doubt would have been preferable to the other confection. Indeed he acknowledges that he found it superior to opium, or its tincture.

In the Medical Commentaries for the years 1794 and 1797, published by Dr. Duncan, we are informed by Mr. George Kellie, an ingenious navy surgeon, of the good effects of compression by the tourniquet, in stopping the cold fit of intermittents; and several instances are related of this curious fact. The plan pursued by him was to apply the instrument on one thigh and on one arm, of opposite sides, at the same time. In two minutes after the application of the tourniquets, the shaking and other symptoms of the cold stage entirely ceased, a mild hot stage was immediately induced, and the patient found himself quite relieved. After suffering the instruments to remain on for about fifteen minutes, they were removed, and the cold symptoms did not return.

From various trials which Mr. Kellie made, he concludes, first, that if at any time during the cold fit of an intermittent, tourniquets be so applied as to obstruct the circulation in two of the extremities (for example, one on the subclavian, and the other on the iliac of opposite sides), the hot fit will be induced in about three minutes afterwards; secondly, that if the tourniquets be applied previous to the accession of the paroxysm, the cold stage will be entirely prevented; and thirdly, that where the cold stage of an ague is either thus shortened, or altogether prevented, the following hot stage will be rendered both milder and of shorter duration.

Sulphuric æther, administered in the quantity of a drachm for a dose on the approach of the cold fit of an intermittent, has been found in some instances to prevent the accession of the hot one. In the fifth volume of Medical Facts and Observations, two cases are recorded by Mr. Davidson of the efficacy of this remedy, where the bark and other medicines which were previously used had failed. The first dose is not to be expected to remove the disease at once, and therefore on the approach of the next fit it ought to be repeated. During the intervals, the bark and other tonics are to be taken.

By administering an emetic immediately before the accession of the cold stage, we may sometimes be enabled to destroy the morbid catenation induced by the cause of the disease, and thereby prevent a return of the paroxysm.

Might not the affusion of cold water be employed with some prospect of success, two or three hours before the expected accession of the paroxysm, or immediately after the hot fit is completely formed? Indeed I have tried it, and with some advantage, in the former instance. The morbid catenation in these fevers has been broken by putting the patients under a copious shower-bath in the hot stage of the paroxysm.

On the authorities I have mentioned, we are induced to presume that we have a knowledge of powerful remedies for cutting short the cold fit of an intermittent; or, should the hot fit succeed, that it will certainly be rendered both milder and of shorter duration

each time of its return. Should we, however, be disappointed in our expectations, and the febrile symptoms run high, we may then advise the use of gentle diaphoretics, in small and frequently repeated doses, as prescribed under the head of Simple Continued Fever, or below ;* and to increase their effect, the patient must be directed to drink frequently of tepid diluting liquors. If there is any inflammatory diathesis, nitre may be added to these medicines. Where there is much nausea with vomiting, the stomach may be washed out with one or two basinsful of chamomile tea.

If incommoded by a cough, attended by a pain in the side affecting the breathing, we may recommend the application of a blister; and should these affections not be relieved by the remedy, it may not be improper to take away a small quantity of blood. If the head become much affected, either during the paroxysms or intermissions, the application of a blister to the back, and of leeches to the temples, will be advisable, laying opiates aside.

Should there be great coldness of the legs, with a sinking of the pulse, cataplasms of mustard may be applied to the soles of the feet for a proper length of time.

In Dr. Lind we find an advocate for the exhibition of opium likewise in the hot fit. He tells us he has observed, that, if taken during the intermissions, it had not the least effect, either in preventing or mitigating the succeeding paroxysm; when given in the cold fit, it once or twice seemed to remove it; but that when administered half an hour after the commencement of the hot fit,

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* 3. ℞. Succ. Limon. f. ℥ss.
Potassæ Subcarbon. ℈i. *vel* q. s. ad saturationem.

Aq. Menth. f. ℥j.

Antimon. Tartar. gr. $\frac{1}{6}$.

Syrup. ℥ij. f. M.
ft. Haustus, tertiis horis repetendus.

Vel,

4. ℞ Liquor. Ammon. Acetat. f. ℥iij.

Aq. Cinnam. f. ℥ij.
— Puræ, f. ℥v.

Vini Antimon. Tart. ℥. xv.
Syrup. Cort. Aurant. f. ℥j. M.
ft. Haustus.

Vel,

5. ℞ Pulv. Antimonial. gr. ij.
——Contrajerv. gr. x. M.

ft. Pulv. 4tis horis sumendus.

Vel,

6. ℞ Pulv. Ipecac. C. gr. viij.
Capiat tertia quaque hora.

* 3. Take Juice of Lemon, half an ounce.
Subcarbonate of Potass, one scruple, or enough to saturate it.
Mint Water, one ounce.
Tartarized Antimony, the sixth of a grain.

Common Syrup, two drachms.
Mix them for a draught, which is to be repeated every three hours.

Or,

4, Take Solution of Acetate of Ammonia, three drachms.
Cinnamon Water, two drachms.
Pure Water, five drachms.
Wine of Tartarized Antimony, fifteen drops.
Syrup of Orange Peel, one drachm.
Mix them for a draught.

Or,

5. Take Antimonial Powder, two grains.
Powdered Contrajerva Root, ten grains.
Mix them, and let this powder be taken every four hours.

Or,

6. Take Compound Powder of Ipecacuanha, eight grains, repeating the dose every three hours.

it generally afforded immediate relief. When given in the hot fit, he observed the following effects to ensue :—1st, It shortened and abated the fit; and this with more certainty than an ounce of the bark was found to affect the disease. 2d, It generally gave a sensible relief to the head, took off the burning heat of the fever, and occasioned a profuse sweat. The sweat was attended with an agreeable softness of the skin, instead of the burning sensation which affects patients sweating in the hot fit, and was always more copious than in those who had not taken opium. 3d, It often produced a soft and refreshing sleep to a patient tortured in the agonies of the fever, from which he awaked bathed in sweat, and in a great measure free from all complaints.

The Doctor has always observed, that the effects of opium are more uniform and constant in intermitting fevers, than in any other disease, and are there more quick and sensible than those of any other medicine. An opiate thus given soon after the commencement of the hot fit, by abating the violence and lessening the duration of the fever, preserves the constitution so entirely uninjured, that, since he used opium in agues, a dropsy or jaundice has seldom attacked any of his patients in those diseases. When opium did not immediately abate the symptoms of the fever, it never increased their violence; on the contrary, most patients reaped some benefit from an opiate given in the hot fit, and many of them bore a larger dose at that time than they could at any other. Dr. Lind offers it as his opinion, that opium in this disease is the best preparative for the bark, as it not only produces a complete intermission, in which case alone that remedy can be safely administered, but occasions such a salutary and copious evacuation by sweat, as generally to render a much less quantity of bark requisite.

When we obtain an intermission, the cinchona bark is to be given, during the intervals, in large doses. One or two drachms of the powder may be taken every hour, if the stomach will bear so much, as the benefits to be expected from this medicine greatly depend on a large quantity being administered in a short space of time; for five or six ounces of bark taken in a few days, will be attended with a much better effect than perhaps as many pounds taken in the course of some weeks. If it will not sit easy on the stomach in substance, we must be content to substitute a decoction or infusion of it; or we may give the extract *, joining a few drops of diluted sulphuric acid.

Where the intermissions between the paroxysms are long, as in the tertian and quartan types, we should delay giving the bark until within eight hours or so of the accession of the cold fit.

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* 7. ℞ Extract. Cinchon. gr. xv.
Decoct. ejusdem, f. ℥jss.
Tinct. Cort. Aurant. f. ℥j. M.
ft. Haustus, alternis horis sumendus.

* 7. Take Extract of Peruvian Bark, fifteen grains.
Decoction of the same, one ounce and a half.
Tincture of Orange Peel, one drachm.
Mix them, and let this draught be taken every other hour.

If all the forms which have been mentioned are nauseated and rejected by the stomach, we may advise the bark to be given in clysters, in which form it likewise proves very efficacious. For this purpose, about a drachm of its extract, dissolved in a sufficient quantity of water, with the addition of a few drops of tinctura opii, in order to its being longer retained, will be most proper. With children who cannot be prevailed on to take the bark, we may administer it with much efficacy in this way, repeating the clyster every four hours. For the cure of intermittents in children, the bark has sometimes proved effectual when applied externally, by putting the powder of it into a quilted waistcoat.

In most intermittents it would perhaps be the best practice to unite opium with the cinchona bark, as it would enable the stomach to bear much larger doses of the latter, and likewise add very considerably to its good effects.

It is conjectured by some physicians, that cinchona stops the paroxysms of an ague, not through the medium of the circulation, but by its tonic effect on the nerves of the stomach; and indeed it is only in this way that the salutary operation of several other remedies in intermittent fever can be accounted for.

Various substances of either an astringent, stimulant, or aromatic nature, such as alum, the various preparations of iron, &c., nutmeg, and snake-root, have been joined to the cinchona bark, with a view of increasing its powers; but as these lessen its dose by their bulk, it will be best to give it by itself, unless it occasions a purging, and then about eight or ten drops of tinct. opii, or about a drachm of the tinct. kino, may be added to each dose. On the contrary, should it produce costiveness, some gentle laxative may be taken occasionally, such as a few grains of rhubarb.

In intermittents of long continuance, where the person is advanced in years, and weak, the habit phlegmatic, the season rainy, and the situation damp, it will be proper to make an addition of snake-root and some warm aromatic * to the cinchona bark; and when the symptoms have more of an inflammatory tendency, it may be given with a small portion of the potassæ subcarbonas.†

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* 8. ℞ Cort. Cinchon. crass. ℥j.

Ccq. in
Aq. Font. Oj. ad Oss.
Colat. adde

Tinct. Serpent. Rad.
—— Card. C. āā f. ℥vj. M.

Capiat Cochl. iij. magna pro dos. sæpe per diem.

† 9. ℞ Decoct. Cort. Cinchonæ, f. ℥jss.

Potassæ Subcarbon. gr. x. ad xv.

Syrup. Althææ, f. ℥ij. M.

fi. Haustus, quartis horis adhibendus.

* 8, Take Peruvian Bark bruised, one ounce.
Pure Water, one pint; boil it over a slow fire until reduced to half a pint, strain it, and when cool, add
Tincture of Snake-Root.
Compound Tincture of Cardamoms, six drachms of each.
Mix them, and take three large spoonsful for a dose, several times a day.

† 9. Take Decoction of Peruvian Bark, an ounce and a half.
Subcarbonate of Potass, from ten to fifteen grains.
Syrup of Marshmallows, two drachms.
Mix them. This draught may be taken every four hours.

In cold climates, it will in general be advisable to wait for a perfect and regular intermission before we give the bark: but in warm ones, where intermittents are apt to degenerate into continued fevers or remittents, and in which the habit is more irritable and weak, it will be right to administer it, even on the most imperfect intermission, or slightest remission.

In all cases of intermittents, it will not be sufficient that the recurrence of paroxysms be stopped for once or twice by a use of the bark; a relapse is commonly to be expected, and it should therefore be prevented by a continued exhibition of the medicine at proper intervals; even for some weeks after the disease appears to be removed, it may be advisable to take a little of it occasionally, particularly in damp weather, or during the prevalence of an easterly wind.

Various species of the bark are to be met with among the venders of this medicine; and several gentlemen of eminence in their profession have given a decided preference to the yellow (cinchonæ cordifoliæ cortex), as possessing virtues far superior to the red, or any other species yet introduced into use.

From various trials made with it, they report, that it is bitter to the taste, and more astringent than the other sorts; that a decoction and infusion of it are less liable to undergo fermentation; and that in every instance in which it was used by them, it invariably proved successful. Half a drachm of the yellow bark in powder, given every two hours, has in general been found sufficient for the cure of an intermittent; hence they have presumed that it possesses nearly a double febrifuge power to that of common bark. Of its good effects I can myself bear testimony, having used it with the most decisive success.

During my residence in the West Indies, I met with many cases that resisted the powers of cinchona, and that gave way to a use of quassia. Indeed, so sovereign a remedy was this found in intermittents, and so easy was it to be obtained, that it was pretty generally substituted by all practitioners, for the cinchona, in common cases, on the plantations. The best way of administering it is in the form of infusion, as below *. The angustura bark (cortex cusparіæ) is another remedy which has been often used with success.

A great variety of other barks, such as the cinchona Jamaicensis discovered by Dr. Wright; the cinchona Charibbæa, or St. Lucia bark, the Tellicheri bark, the Swietenia febrifuga of Dr. Roxburgh, &c. have been substituted for the Peruvian with a very good effect

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* 10. ℞ Quassiæ Contus, ℥ij.
Aq. Bullient. f. ℥viij. Post horam Col. et adde

Tinct Cascaril.
——— Cardam. C. āā f. ℥ss. M.

Cochlaria iij. magna tertiis horis sumenda

* 10 Take Quassia Bark bruised, 2 drachms.
Boiling Water, eight ounces; infuse for an hour, then strain off the liquor, and add
Tincture of Cascarilla,
Compound Tincture of Cardamoms, each half an ounce.
Mix them. Three large spoonsful are to be taken every three hours.

when this could not be obtained. As a tonic and febrifuge, the willow bark has of late years been much employed with considerable success both in England and on the Continent. The varieties of the willow which have been noticed by botanical writers, are very numerous; but the salix latifolia or caprea (broad-leafed willow bark) seems to possess virtues greatly superior to the others. A late writer* has endeavoured indeed to convince us, that it has a superior efficacy above the cinchona in various diseases, more particularly that branch of the healing art termed medical surgery. The decoction is the form to which this practitioner gives the preference: one ounce and a half of the dried and pounded bark boiled for a quarter of an hour in two pints of soft water. Of this, the ordinary dose is two or three spoonsful, given three or four times a day.

A cheap substitute for the bark of cinchona, and which has proved very successful, consists of equal parts of bistort and calamus aromaticus, with the addition of a little ginger. This remedy may be given in the same doses as the former.

The radix rhataniæ is another substitute, which has lately been proposed for the cinchona; but from a few trials I have made of it in intermittents, I am convinced that it is by no means deserving of the encomiums which have been lavished on it by Dr. Rees. Twenty grains of the powder may be considered as a moderate dose; and it may also be employed either in the form of extract, decoction, or tincture.

All these barks, probably, owe their efficacy to one common principle; but what this is, it may be difficult to ascertain. Their febrifuge power has been attributed by some principally to the tannin, which they all contain in a greater or less quantity; but this opinion must be erroneous, as it appears, from Sir H. Davy's experiments, that very little tannin is contained in the cinchona, or in the other barks supposed to be possessed of febrifuge properties.

Charcoal is a remedy much employed by physicians in Sicily in the cure of intermittent fevers, and apparently with some success†. It is administered in doses of one scruple, or half a drachm, three or four times a day.

In intermittents, where from flatulency, distention of the abdomen, or a retention of fæces, it becomes necessary to have recourse to laxatives, we may employ something of a warm aromatic nature‡,

* See Wilkinson's Experiments on the Broad-leafed Willow Bark.
† Edinburgh Medical Journal for October, 1814.

‡ 11. ℞ Pulv. Rhei, gr. xv.
—— Cinnam. Compos. gr. v.
ft. Pulvis.

Vel,

12. ℞ Infus. Sennæ, f. ℥jss.
Tinct. Rhei, f. ℥jj.
—— Lav. C. f. ℥j. M.
ft. Haustus.

‡ 11. Take Powdered Rhubarb, 15 grains.
Compound Powder of Cinnamon, five grians.
Mix them.

Or,

12. Take infusion of Senna, one ounce and a half
Tincture of Rhubarb, two drachms.
Compound Tincture of Lavender, one drachm.
Make them into a draught.

which should be taken during the intermissions, so that its operation shall have ceased before the accession of the next paroxysm.

It often happens, when intermittents have continued a long time, that schirrhosities of the liver or spleen take place, which are vulgarly denominated ague cakes. These complaints have been attributed to an improper use of the cinchona bark; but they evidently arise from the great quantity of blood which is thrown on these parts during the cold fit, which distends them and so produces schirrhosity, and which we often find it difficult to remove, although a stop is put to the fever. In such cases it may be proper to join deobstruents with cinchona, as below*. If these do not answer, we must have recourse to mercury†. A small dose should be given every night, so as just to affect the mouth, but the tonic medicines are to be continued. If the patient cannot take this remedy internally, he must substitute its external use in the form of unction, rubbing into the groins about a scruple, if an adult, of the unguentum hydrargyri fortius every night at bed-time.

Mercury is, however, employed unsuccessfully in many instances of these enlargements, and which have afterwards given way to other remedies. Two cases of enlarged spleen, which resisted the effects of mercury, although the salivary glands had been sufficiently excited, and were afterwards removed by the succus inspissatus conii, are recorded in the work of a late writer‡.

In warm climates particularly, these swellings are often to be met with as the consequence of long continued intermittents; but of these more particular mention is made under the head of Chronic Inflammation of the Liver, as also of the Spleen.

These tumours, by pressing on the ramification of the vena portarum, which passes into the liver, and branches in the manner of an artery, prevent the blood from returning from the abdominal viscera with the same facility that it commonly does. The passage

‡ See Essay on Hepatitis and other Bilious Complaints in India, as well as Europe, by Charles Griffith, M. D.

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* 13. ℞ Pulv. Cinchon. ℥j.
—— Rhei, ℥ss.
Sodæ Subcarbon. ℥ij.
Syrup. Zingib. q. s. M. ft. Elect.
Cujus sumat Cochl. min. ter quaterve in die.

† 14. ℞ Hydrargyr. Submuriat. gr. j.
Confect. Opii, gr. iij. M.
Fiat pilula, omni nocte sumenda.

Vel,

15. ℞ Pilul. Hydrargyri, gr. iij.
—— Opiat. gr. ij. M.
Ft. Pilula.

* 13. Take Peruvian Bark in powder, one ounce.
Powdered Rhubarb, one drachm and a half.
Subcarbonate of Soda, two drachms.
Syrup of Ginger, as much as may be sufficient to form the whole into an electuary, of which take about a teaspoonful three or four times a day.

† 14. Take Submuriate of Mercury (Calomel), one grain.
Opium Confection, three grains.
Form them into a pill, to be taken every night.

Or,

15. Take Mercurial Pill, three grains.
Opiate Pill, two grains.
Form them into a pill, to be taken as the former.

of the blood being thus retarded, occasions a greater extravasation of lymph in the cavity of the abdomen, so that the ordinary exertions of the absorbents is not sufficient to take up the whole lymph. Thus an ascites takes place, and in this case we must have recourse to the means advised under that head.

Dropsy likewise arises sometimes from mere weakness, without any tumour of the abdominal viscera, and occasioned by the long continuance of the disease. In these instances it may be removed by exhibiting the bark of the cinchona together with stomachic bitters, diuretics, and chalybeates. As the strength returns, and the patient recovers health, the dropsical appearances will diminish by degrees.

When tumours are formed in any of the abdominal viscera, it not uncommonly happens that they press on the ductus communis choledochus, the duct of the gall-bladder, the hepatic duct, or the pori bilarii; by which means the bile is prevented in part, or wholly, from getting into the duodenum; it is therefore absorbed, and produces jaundice of itself, without any concomitant dropsical symptom, or along with it, ascites. When this happens, the disease is generally fatal.

The blood, by being determined from the blood vessels upon the abdominal viscera, when the patient becomes weak after an intermittent has continued for some months, sometimes occasions an increased secretion from the glands of the intestines, and thus gives rise to a diarrhœa. This affection usually proves more severe during the remissions and intermissions; and less severe, or ceases altogether, at the time of the accession and during the time of the paroxysm. Such diarrhœa tends to increase the weakness considerably, and not unfrequently occasions dropsical appearances. At first, œdematous swellings appear in the lower extremities; these increase, rising up to the thighs, and then to the integuments of the abdomen. Ascites also takes place. If astringent remedies be employed, so as to put a stop to the diarrhœa, the dropsical appearances usually increase, and the intermittent continues to recur, although often very obscurely and very irregularly. If the diarrhœa be permitted to go on, or if it has been stopped, and is allowed to return by leaving off the astringents, the weakness increases in such a degree as to destroy the patient. If the bark of cinchona be exhibited, it often increases the diarrhœa without having the effect of preventing irregular returns of the attacks or exacerbations. In this case, Dr. Fordyce* says it will be best to clear the primæ viæ, by employing about twenty-five grains of rhubarb; after its operation is over, to exhibit cinchona in pretty considerable quantity, such as a drachm every three hours, and to give at the same time a grain of ipecacuanha with fifteen drops of tinctura opii, together with a moderate quantity of any warm spice, every four hours.

In some cases of intermittents, which have continued a great

* See his Fourth Dissertation on Fever.

length of time, owing to their having been entirely neglected in their beginning, or where the cinchona has failed to procure the desired effect, preparations of iron and copper have been administered with success. The oxydum zinci, given in the dose of two grains thrice a day, has removed obstinate intermittents when the usual remedies have failed.

The zinci sulphas has likewise been administered with much success. The sulphate of copper, given in doses of a quarter or half a grain every four or six hours, is also said to have proved very efficacious in some cases of obstinate intermittents. As a tonic, the cuprum ammoniatum* has been given with advantage. All these may be employed along with a decoction of the cinchona, or any of the other tonic bitters which have been mentioned.

Arsenic has been strongly recommended as a remedy in intermittents, and it is undoubtedly a very powerful medicine, for I have found it to remove obstinate intermittents which had long resisted all other means. The inhabitants of a considerable portion of the country which surrounds Salisbury (the place of my residence), are very subject to these fevers, but I have never yet been disappointed in removing even those of an obstinate nature, by a proper use of the arsenical solution: it is, however, my constant practice to conjoin four or five drops of tinctura opii with each dose of it.

The late Dr. Fowler seems to have been the first physician to advise this medicine in agues; and on his recommendation many practitioners have used it, agreeably to his directions, with the most pointed success. The preparation he advised is now introduced into the London Pharmacopœia, under the name of liquor arsenicalis. The dose is from two to twelve drops, once, twice, or oftener in the day, according to the age, strength, &c., of the patient. Eight days' administration of the medicine, in the manner just mentioned, will generally be found sufficient for the radical cure of an intermittent.

Vomitings, gripings, swellings, and the loathing of food, are the troublesome symptoms now and then produced by an improper use of the arsenical solution. They however disappear generally on a discontinuation of the drops, or only require the exhibition of gentle opiates, or some warm cathartic, such as the tincture of rhubarb.

From the observations which have been made on the use of arsenic in agues, there seem just grounds for believing it to be the most powerful of all the medicines which have been recommended in these complaints. In Lincolnshire, which is a fenny country, where agues are very prevalent, it is universally used, and with the most

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* 16. ℞ Cupr. Ammoniat. ℈j.
Mic. Panis, ʒij.
Syrup. Cort. Aurant. q. s. M. fiant pilul. xxiv. capiat j. *vel* ij.—iij. (sensim augendo dosem) horâ decubitus quotidie.

* 16. Take Ammoniated Copper, 1 scruple.
Crumb of Bread, two drachms.
Syrup of Orange Peel, as much as will be sufficient to form the mass, which divide into twenty-four pills. Take one, two, or three, every night at bed-time, gradually increasing the dose.

most uniform success. Military and naval surgeons will find the arsenical solution a valuable substitute for the bark of cinchona, when their store of this is small or exhausted. Arsenic has long been administered by empirics with the greatest success in intermittents, under the appellation of ague-drop.

The manner in which arsenic acts in curing intermittent fevers, Dr. Darwin thinks, cannot be by its general stimulus, because no intoxication or heat follows the use of it; nor by its peculiar stimulus on any part of the secreting system, since it is not in small doses succeeded by any increased evacuation or heat, and must therefore exert its power on the absorbent system. He suspects its success in the cure of intermittents to depend on its stimulating the stomach into stronger action, and thus by the association of this viscus with the heart and arteries, prevents the torpor of any part of the sanguiferous system.

A combination of the arsenical solution with cinchona * in substance, decoction or infusion, is likely, I think, to prove a valuable remedy in cases of obstinate intermittents, and where either of these medicines administered singly might fail.

During the fits of an intermittent, the patient's strength is to be supported by food of a light nutritive nature, such as preparations of barley, sago, panado, and the like; but when the fit is off, he may be allowed animal food, and a moderate use of wine. A change of air and situation has sometimes a happy effect in removing an intermittent, particularly if from a low marshy country to an elevated one. In autumnal intermittents it has been found, that the air of a city or large town is more favourable than that of the country, owing most likely to the great number of fires that are always burning. When none of the viscera are affected, cold bathing may be used with advantage.

As intermittents are very apt to return, the patient should carefully avoid all such causes as might produce a fresh attack. Should he be incommoded by a giddiness of the head, which is not un-

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* 17. ℞ Liquoris Arsenical. ♏ v.—x.
Decoct. Cinchon. f. ʒx.
Tinct. Cort. Aurant. f. ʒij.
—— Opii, ♏ v. M.
ft. Haustus, ter in die sumendus.

Vel,

18. ℞ Infus. Calumbæ. f. ʒxj.
Liquor. Arsenical. ♏ viij.
Tinct. Opii, ♏ vi.
—— Cinchonæ C. f. ʒj. M.
ft. Haustus, 4ta vel 6ta quaque hora capiendus.

* 17. Take Arsenical Solution, from five to ten drops.
Decoction of Peruvian Bark, ten drachms.
Tincture of Orange Peel, two drachms.
—— —— of Opium, eight drops.
Mix these, and let the draught be taken thrice daily.

Or,

18. Take Infusion of Calumba, eleven drachms.
Arsenical Solution, eight drops.
Tincture of Opium, six drops.
Compound Tincture of Peruvian Bark, one drachm.
Mix them, and let the draught be taken every fourth or sixth hour.

commonly the case even after a slight attack of this fever, it may generally be relieved by volatiles * and the bark in wine.

REMITTENT FEVER.

By a remittent is to be understood where the fever abates, but does not go off entirely before a fresh attack ensues; or, in other words, where one paroxysm succeeds the other so quickly, that the patient is never without some degree of fever. It is to be observed, moreover, that the remissions happen at very irregular periods, and are of uncertain duration, being sometimes longer and sometimes shorter.

This fever is principally induced, as well as the intermittent, by marsh miasma, or the exhalations arising from stagnant water impregnated with the decaying remains of animal and vegetable substances, and is most apt to arise when calm, close, and sultry weather quickly succeeds heavy rains or great inundations. In warm climates, particularly as we approach the tropics, where great heat and moisture rapidly succeed each other, the remittent is a very prevalent type of fever, and often appears under a highly aggravated and violent form, prevailing epidemically. It is likewise often met with in low marshy situations abounding with wood and water, from which miasma are consequently evolved, and is most apt to attack those of a relaxed habit, those who undergo great fatigue, and those who breathe an impure air, and make use of a poor and unwholesome diet.

Although this fever is produced originally by marsh miasma, and in its simple state is consequently not of an infectious nature, still, under bad management, such as crowding too many sick together, and neglecting proper cleanliness and a free ventilation, there cannot be a doubt that it may in its course, engender a matter capable of occasioning a highly contagious fever.

Remittent fever cannot be communicated at any great distance from the source of its exciting cause, however severely and epidemically it may prevail in certain situations and districts; and although the matter producing it be essentially the same, still we may conclude, I think, that a more aggravated form of disease is occasioned by a more concentrated state of the poison: hence the different degrees of severity of remittent fever at different periods of the year, and in different climates.

It has long been observed, that the natives of any place are

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* 19. ℞ Aq. Menth. Virid. f. ℥iijss.
Spirit. Ammon. Aromat. ℥ xxx.
Syrup. Cort. Aurant. f. ℥ss. M.
Capiat. Cochl. larg. j. ter quaterve in die.

* 19. Take Mint Water, three ounces and a half.
Aromatic Ammoniated Spirit, forty-five drops.
Syrup of Orange Peel, half an ounce.
Mix them. The dose may be one large spoonful three or four times a day.

much less liable to be affected with the diseases peculiar to the situation than strangers, or those newly arrived; and it may likewise be added, that when they are attacked with any endemic affection, it is rarely so severe as it is found to prevail among strangers, and those not accustomed to the climate. This I had great opportunities of seeing confirmed in the West Indies, in the case of remittent fever: which seldom affects the natives so severely as it does Europeans not sufficiently naturalized, although in every respect using the same diet, and adopting the same mode of life.

Preceding an attack of a remittent fever, the patient is usually heavy and languid, and is troubled with anxiety, listlessness, sighing, yawning, and alternate fits of heat and cold. On its accession he experiences severe pains in the head and back, intense heat over the whole body, with thirst, difficulty of breathing, and great dejection of spirits; the tongue is white; the eyes and skin appear yellow; there is a pain and sense of swelling about the region of the stomach; nausea, and a vomiting of bilous matter, ensue; and the pulse is frequent and small.

After a continuance of these symptoms for a time, the fever abates considerably, or goes off imperfectly by a gentle moisture diffused partially over the body; but in a few hours it returns with the same appearances as before. In this manner, with exacerbations and remissions, it proceeds at last to a crisis, or is changed into a fever of a different type. In warm climates, the remission often occurs so early as the second day; but in cold ones, it frequently does not take place until from the fourth to the sixth or eighth day.

The accession of fever which has just been described is, however, the mildest form under which it ever makes its appearance; for sometimes a severe delirium arises, and carries off the patient during the first paroxysm; or the remission, perhaps, is scarcely perceptible, and is immediately followed by another paroxysm, wherein there is a considerable aggravation of all the symptoms. The heat of the body is greatly increased, the face highly flushed, the thirst excessive, the tongue is covered with a dark brown fur; respiration laborious, the pulse quick, throbbing, and tremulous, and a delirium arises. At the distance of some time, perhaps, another short or imperfect remission again takes place; but the symptoms return once more with redoubled violence, and at length destroy the patient.

The symptoms which attend a remittent fever are apt to vary according to the situation and constitution of the patient, and likewise the season of the year, and therefore it is impossible to give a certain detail of them; for sometimes those pointing out a redundancy of bile predominate, sometimes the nervous are most prevalent, and at other times the putrid.

A remittent fever is always attended with some hazard, particularly in warm climates, in which it usually goes through its course

in the space of five or six days; but in cold ones, its crisis is not usually effected until the twelfth or fourteenth. The shorter and more obscure the remissions are, the greater will be the danger; and each succeeding paroxysm is attended with more risk than the former. On the contrary, the milder the attack, and the nearer the fever approaches to an intermittent, the fairer will be the prospect of a recovery.

The usual appearances on dissection are, congestions of blood in the liver and spleen, inflammations in the alimentary tube, a distended state of the venous vessels of the brain, and serous effusion into the cavities of that organ.

From the determinations to particular organs which take place in a remittent fever, and the marks of inflammation which are occasionally observed, on dissection, in the brain, stomach, and biliary organs, it would seem that bleeding is a necessary operation. In both cold and warm climates, and at an early stage of the disease, it will be proper to have recourse to it, where the patient is young and of a full plethoric habit, the pulse full and hard, the heat intense, the breathing difficult, or the head much affected with stupor or delirium: and in some cases it may be necessary to repeat the operation in a few hours, if the force of the circulating fluids is not sufficiently diminished thereby: but in warm climates, when none of these symptoms are present, it will be better to omit it, especially if the person has been an inhabitant therein for any length of time, and not lately arrived from Europe.

In all protracted cases of this fever, under every climate, where the pulse is weak, but still the head much affected, the application of cupping glasses to the occiput, or of leeches to the temples, and blisters, will be more advisable than venesection.

To assist in allaying the violence of the fever, it will be prudent carefully to remove and avoid every thing that might in the least contribute to increase it, such as too strong a light falling on the eyes, all noise and motion, and likewise any excess of heat. The patient is therefore to be kept perfectly quiet; the covering of his bed is to be light, and his chamber of a moderate temperature, by allowing a free admission of cool air into it. To assist these means, he should be presented from time to time with some cooling acidulated liquor, such as lemonade, tamarind beverage, or a solution of the supertartrate of potass, or even cold water. Throughout the whole course of the disease, it will be advisable to change his body-linen, as well as that of the bed, frequently; to sprinkle his chamber often with vinegar, and to remove immediately whatever he voids by stool. As in most cases there is a determination to the brain, the patient's head should be kept rather elevated, and being shaved, numerous folds of linen, moistened with vinegar and water may be kept constantly applied to it: his feet may be immersed occasionally in warm water.

As nausea usually prevails at the commencement of the disease, it will, in all cases, be right to cleanse the stomach by giving a gentle

emetic of ipecacuanha, or a solution of tartarized antimony, which perhaps may be preferable: the operation of this being over, the bowels may then be emptied by some gentle laxative, which will seldom fail in bringing off a considerable quantity of dark bilious matter. Drastic purges, by determining inwardly and increasing the irritability of the stomach, would be prejudicial; and therefore, if it is necessary to obviate costiveness in the course of the disease, it will be most advisable to do it by the laxative medicines here prescribed*, assisted now and then with aperient clysters.

The necessity of carefully inspecting the alvine discharges in remittent fever cannot be too strongly inculcated, as it affords the best or prinipal index as to the regulation of our employing purgative medicines.

In this fever, as well as typhus icterodes, the submuriate of mercury, combined with rhubarb or jalap, may be regarded as a valuable remedy, where we wish to carry off putrid feculent matter from the bowels, and there is at the same time any degree of nausea or vomiting present; as, from the smallness of its bulk, it may possibly be retained on the stomach when every other purgative might be rejected.

After these evacuations, and where there is no delirium present, an opiate will be found of great service in quieting the commotions induced either by the spontaneous or artificial discharges, and in enabling the patient to retain on his stomach both nourishment and medicines.

In the remittent fevers of warm climates, as well as of temperate countries in the hotter seasons of the year, the best effects are to be derived from cold affusion, or throwing cold water over the patient; but it is to be understood that the height of the paroxysm is the proper time for the application of the remedy. The sensations of heat are then strong; the headach is violent, and delirium frequently runs high. By employing the remedy at an early period, we may be able either to arrest the disease precipitately, or bring about an early solution of the paroxysm; but at the least we may for the most part so ameliorate its aspect, as that from an obscure

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* 1. ℞ Potassæ Tartrit. ℥ij.
Infus. Sennæ Compos. f. ℥jss.
Tinct. Jalapæ, ℥i. M.
ft. Haustus.
Vel,
2. ℞ Pulv. Rhei, gr. x.—xx.
Hydrargyr. Submuriat. gr. v.
Syrup. q. s. M.
Fiant Pilul. iv. pro dos.
Vel,
3. ℞ Hydrargyr. Submur. gr. v.
Pulv. Jalap. gr. xv. M.
ft. Pulvis.

* 1. Take Tartrate of Potass, 2 drachms.
Compound Infusion of Senna, one ounce and a half.
Tincture of Jalap, one drachm.
Mix them for a draught.
Or,
2. Take powdered Rhubarb, from ten to twenty grains.
Submuriate of Mercury, five grains.
Common Syrup, as much as will form the mass; which divide into four pills, to be taken at once.
Or,
3. Take Submuriate of Mercury, five grains.
Powdered Jalap, fifteen grains.
Mix them, and take them for a dose.

remittent it will soon become an intermittent of a distinct and regular type. Where signs of congestion, or irregular action, present themselves in the abdominal or biliary system, and the disease is recent, it will be advisable, previous to having recourse to affusion, to premise proper evacuations.

In the progress of the disease, where much debility has arisen, aspersion, or sponging the body over with cold water and vinegar, together with an internal use of wine, may be substituted for affusion or immersion.

The general effects to be observed from affusion, where it can be practised with propriety, are a diminution of heat and anxiety, greater cheerfulness of countenance, improved recollection, tendency to sleep, the pulse becoming fuller and more uniform, and the skin moist, with now and then a distinct remission.

To alter the type of the fever, and bring the remissions into perfect intermissions, if possible, by promoting a gentle diaphoresis it will be proper to give antimonials in small and frequently repeated doses. They may be prescribed as mentioned under the head of Simple Continued Fever, or as below*; and to assist their effect, the patient should take frequent small draughts of some tepid diluting liquor.

Where frequent vomitings prevail, antimonials will not be proper. In their stead, we may direct the saline medicine to be administered so as that the effervescence shall take place in the stomach, with the addition of about ten drops of tinct. opii to each dose. Moreover, we may direct flannel cloths, wrung out in a warm decoction of chamomile flowers and bruised poppy-heads, with an addition of rectified spirits, to be kept constantly applied over the region of this organ.

Should these means fail in procuring the desired effect, a large blister may be put immediately over the part; which will be found, in general, a very effectual remedy. The early application of a blister, even in cases where no great irritability of the stomach prevails, might in most instances be proper, as it will tend to prevent the determination to that organ. Blisters likewise prove highly serviceable in the latter stages of a remittent fever, when the spirits flag, and the pulse is low and fluttering, with insensibility or a disposition to coma. In such cases they may be applied between the shoulders, or to the legs. Sinapisms of mustard may also be put to the soles of the feet.

When severe vomiting has arisen, the patient ought to swallow as little drink as possible, and should only now and then just moisten his mouth and throat; for whatever reaches the stomach is sure to be rejected shortly with considerable violence; and each

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* 4. ℞ Pulv. Jacob. Ver. gr. iv.
Camphor. gr. iij.
Confect. Rosæ, q. s. M.
ft. Bolus, 3tia vel 4ta hora sumendus.

* 4. Take James's Powder, four grains.
Camphor, three grains.
Confection of Roses, a sufficiency to form them into a bolus or two pills, to be taken every third or fourth hour.

time it is thrown into these convulsive motions, the disease is strengthened, and the person exhausted. Under such circumstances it will be better to support the strength, by administering clysters, composed of broths and other nutritious liquids, than to attempt it by giving any thing by the mouth.

When the stomach is not in an irritable state, and every thing is retained readily, the patient is to be supported by food of a light generous nature. During the remissions, a little wine may be mixed with it.

As soon as the fever shews a disposition to yield, and a perfect remission takes place, we ought to give bark of cinchona in substance, and in such doses as the stomach will easily bear: and if about twenty drops of the acidum sulphuricum dilutum are added to each dose, the effect will be increased. Should the cinchona in powder prove either disagreeable to the patient, or excite nausea, then a decoction or infusion of it must be substituted. If any of its preparations should occasion a purging, about ten drops of the tinctura opii, or a drachm of the tinct. catechu, may be added to each dose.

In cold climates we may wait for a perfect and complete remission before we give the cinchona: but in warm climates we ought to administer it even on the most imperfect and short remission: and although it may not prove sufficiently efficacious to prevent a fresh attack at first, yet it will seldom fail to mitigate the subsequent returns of the fever, and will at last bring about a regular and perfect intermission.

By neglecting to give the cinchona in the West Indies and other warm climates upon the first remission, the fever is apt to assume a continued form. Where danger is to be apprehended with every return of the paroxysm, and where the interval is likely to be short, we should give at least half an ounce of this bark at once, immediately on the commencement of the intermission. During the rest of the intermission or remission, we may administer it in doses of about two drachms, repeated at such distances as that the patient shall take an ounce, or an ounce and a half, if possible, previous to the next accession. When the interval is pretty long, the remedy may be divided into smaller doses.

To guard against a relapse, the cinchona should be continued for some days after a cessation of the attacks, and not be too hastily left off, as is sometimes the case.

The late Dr. Fowler found the most beneficial effects from the use of arsenic in the form of solution in this fever, as well as in intermittents. From his report, published in the ninth volume of the Medical Commentaries, it appears that he experienced its virtues from repeated trials made of it on himself, having been visited by several attacks of a remittent between the years 1786 and 1791. He took the solution as directed to be prepared under the title of liquor arsenicalis, in doses of from eight to ten drops twice a day, and always experienced the curative effects of the medicine,

during each period of its administration, to be very pointed and successful.

We are also informed by Dr. Ferrier,* that he has employed it in some very dangerous and tedious remittents, and always found it a safe and certain remedy. He observed that it generally lessened, if it did not suspend, the second paroxysm after its being exhibited, and it effected the purpose without producing the slightest disturbance in the habit. To an adult, he usually gave five drops of the saturated solution every four hours, and seldom found it necessary to exceed this dose. The only sensible effects produced by it, Dr. Ferrier tells us, are the removal of the crust on the tongue, the appearance of a sediment in the urine, and increased firmness of the pulse.

Probably it might be best to administer this solution combined with the cinchona, either in substance, decoction, or infusion.—See Intermittents.

Every thing that may have a tendency to bring on a fresh attack of fever is carefully to be avoided during the state of convalescence. A change of air and situation (particularly if it has been low and damp) may have a good effect in expediting the patient's recovery; and if the appetite does not return readily, he may take stomachic bitters with advantage.—See Dyspepsia for these.

Gestation in the open air in wheel carriages is a remedy which has been strongly recommended by Dr. Jackson,† towards the close of the bilious remittent fever of warm climates, as well as of all others which have arisen from infection; and he cites many instances which fell under his treatment and immediate observation, whilst he officiated as physician to the army, both on foreign stations and at home, in which it was employed not only with safety, but with the highest efficacy: particularly so in those where the diseased action had ceased, but where the healthy movement was slow. He observes, that although the good effects of gestation be in themselves conspicuous, they are at the same time much increased by ablutions, by an entire change of clothes, and by frictions, both before the journey is undertaken, and after it is finished.

In seasons and places where this fever is prevalent, it will be advisable, by way of preventive, to take a proper dose of the tinct. cinchonæ composita, about twice a day, but more particularly on an empty stomach in the morning.

CONTINUED FEVERS.

Fevers of this nature continue for several days with nearly the same violence, having evident exacerbations and remissions daily.

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* See the new edition of his Medical Histories and Reflections.
† See his Exposition on applying Cold Water in Fever, p. 398.

SYNOCHUS, OR SIMPLE CONTINUED FEVER.

Synocha and typhus, blended together in a slight degree, seem to constitute this species of fever, as has before been observed; the former being apt to preponderate at its commencement, and the latter towards its termination. It becomes contagious where cleanliness and a proper ventilation are neglected, and is of more frequent occurrence in this country than any other kind of fever.

Every thing which has a tendency to enervate the body, may be looked upon as a remote cause of fever; and accordingly, we find it often arising from great bodily fatigue, too great an indulgence in sensual pleasures, violent exertions, intemperance in drinking and errors in diet; and now and then, likewise, from the suppression of some long-accustomed discharge. Certain passions of the mind (such as grief, fear, anxiety, and joy) have been enumerated among the causes of fever, and in a few instances it is probable they may have given rise to it; but the concurrence of some other power seems generally necessary to produce this effect. The most usual and universal cause of this fever is the application of cold to the body, giving a check to perspiration; and its morbid effects seem to depend partly upon certain circumstances of the cold itself, and partly upon certain circumstances of the person to whom it is applied.

The circumstances which seem to give the application of cold a due effect, are its degree of intensity; the length of time which it is applied; its being applied generally, or only in a current of air; its having a degree of moisture accompanying it, and its being a considerable or sudden change from heat to cold.

The circumstances of persons rendering them more liable to be affected by cold, seem to be debility, induced either by great fatigue or violent exertions; by long fasting; by the want of natural rest; by severe evacuations; by preceding disease; by errors in diet; by intemperance in drinking; by great sensuality; by too close an application to study, or giving way to grief, fear, or great anxiety; by depriving the body of a part of its accustomed clothing; by exposing any one particular part of it while the rest is kept of its usual warmth; or by exposing it generally or suddenly to cold when heated much beyond its usual temperature: these we may, therefore, look upon as so many causes giving an effect to cold, which it otherwise might not have produced.

Another frequent cause of fever seems to be, the breathing air contaminated by the vapour arising either directly or originally from the body of a person labouring under the disease. A peculiar matter is supposed to be generated in the body of a person affected with fever; and this floating in the atmosphere, and being applied to one in health, will, no doubt, often cause fever to take place in him; which has induced many to suppose that this infec-

tious matter is produced in all fevers whatever, and that they are all more or less contagious.

The effluvia arising from the human body, if long confined to one place without being diffused in the atmosphere, and proper cleanliness and free ventilation are not sufficiently attended to, will, it is well known, acquire a singular virulence; and will, if inhaled or applied to the bodies of men, become a cause of fever. This happens frequently in typhus.

Exhalations, arising from animal or vegetable substances in a state of putrefaction, have been looked upon as another general cause of fever; marshy or moist grounds, acted upon by heat for any length of time, usually send forth exhalations which prove a never-failing source of fever.

Marsh miasma, as these exhalations are usually termed, have, undoubtedly, the peculiar effect of inducing fever on human bodies, exposed under certain conditions to their influence. From their denomination it is too commonly understood that marshes are the only sources whence these exhalations arise; but they also proceed from moist earth, slime, mire or mud, in a great variety of situations and climates of inhabited, as well as unfrequented and uncultivated tracts of country, in almost every quarter of the globe. They are more powerful, concentrated, and virulent in hot climates and in warm seasons, that in temperate ones. It further appears, that the types, or periodical evolutions of the fever which they excite, are chiefly governed by the degrees of concentration which these exhalations possess; the type being more continued and less intermittent or remittent, in proportion to the power of the exhalation.

Numerous are the writers, who, for upwards of a century, have successively exerted their talents in pointing out what each conceived to be the proximate cause, or essential nature of fever; some supposing it to consist in a noxious matter, introduced into, or generated in the body, the increased action of the heart and arteries being an effort of nature to expel this morbific matter; others offering it as their opinion, that it consisted in an increased secretion of bile; and others, again, that it is to be attributed to a spasmodic constriction of the extreme vessels on the surface of the body, which, indeed, was the doctrine taught by the late Dr. Cullen. A modern writer,* however, tells us, that the local and primary seat of idiopathic fever, is in the brain, and that it is nothing more or less than a species of phrenitis, or topical inflammation of the brain.

Dr. Currie supposes debility of a peculiar kind to be the first operation of the remote cause producing fever; the necessary consequence, or concomitant effect, is, he thinks, a spasm or contraction of the arteries, but more especially of the extreme vessels

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* See Inquiry into the Seat and Nature of Fever, by H. Clutterbuck, M.D.

and capillaries of the surface: hence follows an accumulation of blood on the heart and lungs, the reaction of these organs, the separation of morbid heat, and morbid association. The ground of this theory is, indeed, nearly the same with that of Dr. Cullen: resting, however, more fully on morbid heat, and admitting into the chain of operation an appendage of morbid association.

To investigate these different hypotheses, would lead me into a train of theoretical and vague reasoning, inconsistent with the plan of this publication; I shall, therefore, proceed to point out the manner in which fevers usually come on, barely observing, that the proximate cause of fever is by no means, as yet, satisfactorily ascertained, and that it is a disease, the whole of the appearances of which have not been accounted for.*

An attack of synochus is generally marked by the patient's being seized with a considerable degree of languor or sense of debility, together with sluggishness in motion, and frequent yawning and stretching; the face and extremities at the same time become pale, and the skin over the whole surface of the body appears constricted: he then perceives a sensation of cold in his back, passing from thence over his whole frame; and this sense of cold continuing to increase, tremors in the limbs and rigors of the body succeed. With these, there is a loss of appetite, want of taste in the mouth, slight pains in the head, back, and loins, and a small and frequent respiration.

The sense of cold and its effects, after a little time, become less violent, and are alternated with flushings, and at last, going of altogether, they are succeeded by great heat diffused generally over the whole body; the face looks flushed; the skin is dry, as likewise the tongue; universal restlessness prevails, with a violent pain in the head, oppression at the chest, sickness at the stomach, and an inclination to vomit. There is likewise great thirst and costiveness; and the pulse is full and frequent, beating, perhaps, 90, 100, or 120 strokes in a minute. When the symptoms run very high, and there is a considerable determination of blood to the head, delirium will arise. In this fever, as well as most others of the continued kind, there is generally an increase of the symptoms towards evening.

If the disease is likely to prove fatal, either by its long duration, or by the severity of its symptoms, then a starting of the tendons, picking at the bed-clothes, involuntary discharges by urine and stool, coldness of the extremities, and hiccups, will be observed: where no such appearances take place, the disease will go through its course, and at length cease.

As a fever once produced will go on, although its cause be entirely removed, there can be no certainty as to its duration; and it is only by attending to certain appearances or changes, which usually take place on the approach of a crisis, that we can form any opinion or decision on this head. It has, moreover, been

* See Dissertation on Fever, by Dr. George Fordyce.

asserted by some of our eminent teachers of medicine, but more particularly by Dr. Cullen and Dr. George Fordyce,* that the continued or fresh cause of fever neither will increase that which is already produced, nor occasion a new one: but the soundness of this doctrine I am much inclined to doubt; for although a fever will run its course notwithstanding the cause which gave rise to it has ceased to exist, still the reiterated application of the cause, or continuance within the range of its influence, may, I think, signally exasperate the fever in its progress.

The symptoms pointing out the approach of a crisis, are, the pulse becoming soft, moderate, and near its natural speed; the tongue losing its fur and becoming clean, with an abatement of thirst; the skin being covered with a gentle moisture, and feeling soft to the touch; the secretory organs performing their several offices, and the urine depositing flaky crystals of a dirty red colour, and becoming turbid on being allowed to stand any time.

Many physicians have been of opinion that there is something in the nature of all acute diseases, except those of a putrid kind, which usually determines them to be of a certain duration; and, therefore, that these terminations, when salutary, happen at certain periods of the disease rather than at others, unless disturbed in their progress by an improper mode of treatment, or the arising of some accidental circumstances.

These periods are known by the appellation of critical days and, from the time of Hippocrates down to the present, have been pretty generally admitted. The truth of them, I think, can hardly be disputed, however they may be interrupted by various causes. A great number of phenomena show us, that both in the sound state and the diseased, nature has a tendency to observe certain periods; for instance, the vicissitudes of sleeping and watching, occurring with such regularity to every one; the accurate periods that the menstrual flux observes, and the exact time of pregnancy in all viviparous animals, and many other such instances that might be adduced, all prove this law.

With respect to diseases, every one must have observed the definite periods which take place in regular intermittents, as well those universal as topical, in the course of true inflammation, which at the fourth, or at the farthest the seventh day, is resolved, or after this period changes either into abscess, gangrene, or scirrhus: in exanthematous eruptions, which, if they are favourable and regular, show themselves on a certain and definite day; for example, the small-pox about the fourth day. All these appear to be founded on immutable laws, according to which the motions of the body in health and in disease are governed.

The days on which it is supposed the termination of continued fevers principally happens, are the third, fifth, seventh, ninth, eleventh, fourteenth, seventeenth, and twentieth.

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* See his Treatise on Simple Fever.

Simple continued fever terminates always by a regular crisis in the manner before mentioned; or from the febrile matter falling on some particular parts, it excites inflammation, abscess, eruption, or destroys the patient.

Great anxiety, loss of strength, intense heat, stupor, delirium, irregularity in the pulse, twitchings in the fingers and hands, picking at the bed-clothes, startings of the tendons, hiccups, involuntary evacuations by urine and stool, and such-like symptoms, point out the certain approach of death. On the contrary, when the senses remain clear and distinct, the febrile heat abates, the skin is soft and moist, the pulse becomes moderate and is regular, and the urine deposits flaky crystals, or becomes turbid on cooling, we may then expect a speedy and happy termination of the disease.

It sometimes happens that the fever does not affect every part of the system equally; the symptoms being less severe in one part of it than in another. This, which the young and inexperienced practitioner, and the by-standers in a much greater degree, are apt to think fortunate for the patient, is in fact the very reverse, as has been very judiciously observed by Dr Fordyce;* there being nothing more dangerous in fever than its not affecting every part of the system in an equal degree.

The usual appearances which are to be observed on dissection of those who die of this fever, are congestion, or an effusion within the cranium; and topical affections, perhaps, of some of the viscera.

In fever all motion of the body should be avoided, especially that which requires the exercise of the muscles; the patient ought therefore to be confined to his bed. The exercise of the mind proving a stimulus to the body, all impressions which lead to thought, especially those which may excite emotion or passion, are to be carefully shunned. A person labouring under a fever ought, therefore, to be kept as composed and quiet as possible; and his chamber should not be close and warm, as is too usually the case, but, on the contrary, perfectly cool and sufficiently ventilated; taking care, however, that the air does not come in a direct stream or current upon him. He is likewise to be lightly covered with bed-clothes.

The strict pursuance of an antiphlogistic regimen will be highly necessary to be observed in this fever, as well as in some others of the continued kind. That sort of aliment which gives the least stimulus will be the most proper; the food should be light, nourishing and easy of digestion, consisting of preparations of barley, oatmeal, sago, vermicelli, tapioca, and the meal of Indian arrow-root, varying them now and then for panado, roasted apples, &c. Animal broths produce an increase of heat in the body; and are therefore improper, unless the patient is in a state of

* See his fifth Dissertation on Fever.

convalescence. For drink he may take barley water, linseed tea, toast and water, milk whey, thin gruel, and lemonade; which may be varied now and then for an infusion of balm, and such other herbs, carefully shunning the use of any kind of spirituous or fermented liquor.

In fever it is no uncommon occurrence for peculiar longings to arise; and when they do, should always be gratified in moderation, although they may seem not altogether proper.

The stomach, and the rest of the alimentary canal, are manifestly affected in many cases of fever in a higher degree than other parts of the body, and therefore emetics and purgatives are usually the first means which present themselves to the notice of the physician. In fever it will, therefore, be necessary to pay an early attention to the state of the stomach; and if there are any crudities or corrupted humours producing nausea or vomiting, to dislodge them by administering a gentle emetic.* To assist its operation, the patient should drink freely of lukewarm water, or an infusion of camomile flowers.

To remove the feculent contents of the bowels some gentle laxative† may be taken; and throughout the remainder of the disease the body should be kept open, if necessary, by a repetition of some such medicine, administered as the occasion may require, or by means of aperient clysters.‡ Where the disorder seems to have arisen from, or to be kept up by, a redundant secretion of bile, mild purgatives will be still more highly necessary; and, perhaps, the submuriate of mercury, joined with a few grains of jalap or cathartic extract, may best answer our purpose. Purgative medicines are sometimes combined with antimonials.‖

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* 1. ℞ Pulv. Ipecac. gr. xv.
Antimon. Tartarizat. gr. j.
Aq. Menth. Virid. f. ℥jss. M.
ft. Haustus emeticus.

† 2. ℞ Potassæ Tartrit. ℥ss.
Mannæ Optim. ℥j.
Aquæ Fervent. f. ℥iij.
—— Cinnam. f. ℥ss. M. ft.
Solutio, cujus sumat dimidium, et repetatur dos. post horas duas, nisi alvus prius respondeat.

‡ 3. ℞ Sodæ Sulph. ℥ss.
Decoct. Malvæ Composit. f. ℥xij.
Olei Olivæ, f. ℥ss. M.
ft. Enema.

‖ 4. ℞ Hydrargyri Submuriat. gr. v.
Pulv. Antimonial. gr. j.—ij. M.
ft. Pulvis.

* 1. Take Powdered Ipecacuanha, fifteen grains.
Tartarized Antimony, one grain.
Mint Water, one ounce and a half.
Mix these for an emetic draught.

† 2. Take Tartrate of Potass, half an ounce.
Manna, one ounce.
Warm Water, three ounces.
Cinnamon Water, half an ounce.
Mix them, and of the solution take the half for a dose; which repeat after two hours, unless the bowels are sufficiently acted upon by the former.

‡ 3. Take Sulphate of Soda, half an ounce.
Compound Decoction of Mallow, twelve ounces.
Olive Oil, half an ounce.
Mix them for an aperient clyster.

‖ 4. Take Submuriate of Mercury, five grains.
Antimonial Powder, from one to two grains.
Mix them.

In the simple continued fever it will seldom be necessary to have recourse to the lancet, particularly in warm climates; but should the disease have arisen in a young person of a plethoric habit, and the attack of fever have been severe, with considerable flushing of the face, redness of the eyes, intense pain in the head, or delirium, and a full, hard, and obstructed pulse, or should there be symptoms of congestion in some important organ, we may then advise the taking away eight or ten ounces of blood from the arm. This quantity should be drawn off at once from a large orifice, and not by repeated bleedings, as by the former mode there will be greater temporary but less permanent weakness induced by the evacuation. For the purpose of removing any pain of the head, the application of a few leeches to the forehead and temples will, in many cases, be quite sufficient; and where these are not to be procured, a blister on the nape of the neck may be found a valuable substitute.

By bleeding unnecessarily at the commencement of this fever, such a degree of weakness may be induced as, added to the depression of strength which arises in its progress, might produce symptoms of putrefaction in the second or third week of the disease, so as to prove fatal. By neglecting to bleed, however, when the pulse is full, hard, and quick—the respiration hurried, breath hot, skin dry, and the head highly painful, we shall commit a dangerous error, and endanger the life of the patient.

It has been considered by some physicians of eminence,* that the best time of drawing blood is in the evening, during the febrile paroxysm: as the patients then bear it better, and the relief the next day is always observed to be more effectual and permanent.

Bleeding in fevers is strongly recommended by a late writer,† and he seems to value it far more highly than any of his cotemporaries. In malignant fevers it has generally been considered as nearly inadmissible; but even in these, as well as the fevers of tropical climates, he deems it, on many occasions, to be an essential part of the preparation for his curative means. It is necessary, however, to observe, that he by no means considers bleeding as a debilitating process. Its effects, he says, are stimulative, relatively according to the circumstances of the subject; and they are extensive, for they are felt in all parts of the circulating system, and consequently through the whole extent of the animated machine. The abstraction of blood, by its express effect, diminishes the quantity of a body to be moved; and, therefore, increases the power of the mover: it thus facilitates motion; but this, we are told, is not all. The diminution of the quantity of blood, and change of movement in consequence of such diminution, is in some manner

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* See the Works of Drs. Armstrong, Percival, and Cheyne.

† See Dr. Jackson's Appendix to his Remarks on the Constitution of the Medical Department of the British Army.

productive of a change of condition at the sources of life; motion is effected, changed, even suspended; diseased motions are arrested; an opportunity is thereby furnished for the more effective action of those powers, which are provided and expressly calculated for the stimulation of the due action of health. Bleeding, as it is the most manageable power, so it possesses the most absolute influence over animal movement, either as directly effective of a final purpose, or as preparatory to the action of other means necessary to insure the final purpose.

Such is Dr. Jackson's mode of reasoning; and although plausible, still I conceive there will be found few among our modern physicians who will be ready to adopt his practice, but particularly those whose patients compose the higher classes in life, and whose enervated frames are ill calculated to bear copious depletion by venesection. The stout, robust, and hardy British soldier and seaman (who, indeed, bear phlebotomy better than any class of people in private life) may undergo such a discipline with less injurious effects, and in cases of severe attacks, may undoubtedly require a free use of the lancet; but surely the remedy in question cannot be so universally necessary as Dr. Jackson supposes. He moreover tells us* that a certain condition of susceptibility is necessary to insure the action of whatever means we may employ in fever; and that where this does not exist naturally, it must be excited artificially, which is to be accomplished in some degree by applying fomentations to the legs and feet; or by immersing the lower parts, and even the whole of the body, in a warm bath, but principally by subtracting blood from a vein, the quantity of which is to be measured according to the circumstances of the case, and the effect which arises in the course of the progress, and not by any preconceived opinion of what may be sufficient; for few, he observes, can be supposed to possess such a knowledge of the nature of things, as to be capable of measuring it with exactness in the prescription-book. The effect to be looked for, and which is to decide the measure of the quantity, he notices, implies a remission of pains of all denominations, relaxation of the skin, freedom in all the secretory functions, and a change in the condition of the pulse, which, instead of being hard, tense, and tumultuously agitated, becomes free, open, and regular. Dr. Jackson is at the same time ready to admit, however, that many instances occur where the action of the fever is not principally manifested in the circulating system, either by increase or defect of action; consequently, where bleeding is not the remedy of chief dependence.

If great heat with much thirst prevail, refrigerant medicines may be taken with advantage; and the most useful of this class is

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* See his Exposition on the Practice of applying Cold in Fevers.

the nitrate of potass, which may either be joined with others,* or be added to whatever the patient uses for common drink.†

Acids of all kinds, when sufficiently diluted, are refrigerant remedies, well adapted to continued fevers. Those most in use are the sulphuric, muriatic, and vegetable; but more particularly the latter, such as the acid of tamarinds, oranges, lemons, mulberries, &c. As a refrigerant, cold water may likewise be drunk.

For the purpose of arresting the febrile course, and moderating or abstracting the morbid excess of heat, and restoring a healthy action, cold bathing has of late years been much employed in fevers. The practice of bathing in fevers appears, indeed, to be of great antiquity, for its use and management were well known to Galen, and are well defined by him. It farther appears, by the relation of travellers, to have been long used by several of the eastern nations. We have likewise indisputable proof that cold affusion had long ago been employed by Dr. Wright of Jamaica, and some other physicians in the West Indies, particularly by Dr. Jackson. The notice which this remedy has attracted in England, has certainly, however, been owing to the popular manner in which the subject has been treated by the late Dr. Currie of Liverpool. For the safest time, and most advantageous mode of employing cold affusion in fevers, I beg leave to refer the reader to the admonitions given under the heads of Typhus Mitior and Typhus Gravior. Under the present, I will only observe, that affusion with cold water, either by means of a large watering-pot, so as to allow the streams to pour on the head and shoulders with some force, or by dashing it out of a pail, may be boldly and fearlessly resorted to at the commencement of the greater number of fevers of every climate, where no catarrhal symptoms or inflammatory affection of the lungs are present; but in the advanced stages, or latter periods of most, and where there is much debility, this remedy should be adopted with due caution, and a careful consideration of the attendant circumstances.

With a view to determine the circulation to the surface of the body, it will be right to resort to an early use of such medicines as possess this peculiar power. To excite a perspiration, it will in many cases be sufficient only to make the patient lie abed, and drink plentifully of diluting liquors; but should these simple

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* 5. ℞ Succi Limon. f. ℥ss.
Potassæ Subcarbon. ℈j. vel q. s.

Ad ejus saturationem, dein adde,
——— Nitrat. gr. x.
Aq. Fontan. f. ℥j.
Syrup. Violæ, f. ℥j. M.
ft. Haustus, 3tia quaq. hora sumendus.

† 6. ℞ Decoct. Hordei, Oij.
Potassæ Nitrat. ℥ij.
ft. Potus.

* 5. Take Lemon Juice, half an ounce.
Subcarbonate of Potass, one scruple, or a sufficiency.
After being saturated, add
Nitrate of Potass, ten grains.
Pure Water, one ounce.
Syrup of Violets, one drachm.
Mix them, and let the draught be taken every three hours.

† 6. Take Decoction of Barley, 2 pints.
Nitrate of Potass, 2 drachms.
Mix them for ordinary drink.

means not prove efficacious, it will then be necessary to resort to more powerful agents.

Neutral salts, when taken into the stomach, soon produce a sense of heat on the surface of the body; and if it be covered close, and kept moderately warm, a gentle sweat is often readily brought on. These, therefore, being possessed of the power of determining to the surface, are highly useful in fever, and may be prescribed as in the under-mentioned forms.*

Emetic medicines, and particularly antimonials, given in small nauseating doses, have likewise a similar power of determining the circulation to the surface of the body, and of producing symptoms similar to those which take place in the crisis of fever: these are therefore advisable. They may either be combined with those of the before-mentioned class, or be given by themselves.† From

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* 7. ℞ Ammon. Subcarbonat. gr. x.

Succi Limon. f. ℥ss.
Aq. Menth. Virid. f. ℥j.
Tinct. Lav. Comp. ℥[vi.

Syr. Althææ, f. ℥ij. M.

ft. Haustus.

Vel,

8. ℞ Succi Limon. f. ℥jss.

Potassæ Subcarbon. ℥j. vel q. s. ad.

Ejus saturat. dein adde
Aq. Menth. f. ℥j.
— Fontan. f. ℥iij.
Antim. Tartarizat. gr. jss. ad ij.

Syrup. f. ℥ij. M.

ft. Mistura, cujus capiat cochl. ij. magna tertiis horis.

Vel,

9. ℞ Liquor. Ammon. Acetatis,
Aquæ Cinnam. ää f. ℥ss.

—— Fontan. f. ℥vi.
Vini Antimon. Tart. ℥[x.

Spirit. Ætheris Nitrici, f. ℥ss. M.

ft. Hautus, 3tia quaq. hora sumendus.

† 10. ℞ Pulv. Antim. gr. j. ad iij.

Confect. Rosæ, gr. vj. M.

ft. Bolus, 4tis horis sumendus.

Vel,

11. ℞ Pulv. Jacob. Ver. gr. v. pro dos.

Vel,

12. ℞ Pulv. Ipecacuanhæ, gr. iij.

* 7. Take Subcarbonate of Ammonia, ten grains.
Lemon Juice, half an ounce.
Mint Water, one ounce.
Compound Tincture of Lavender, ten drops.
Syrup of Marshmallow, two drachms.

Mix them for a draught.

Or,

8. Take Lemon Juice, one ounce and a half.
Subcarbonate of Potass, about a drachm.

After the effervescence has ceased, add—
Mint Water, one ounce.
Pure Water, three ounces.
Tartarized Antimony, from one grain and a half to two grains.
Common Syrup, two drachms.

Mix them, and let the patient take two large spoonsful every three hours.

Or,

9. Take a solution of Acetate of Ammonia,
Cinnamon Water, of each half an ounce
Pure Water, six drachms.
Wine of Tartarized Antimony, fifteen drops.
Spirit of Nitric Æther, half a drachm.

Mix them, and give this draught every three hours.

† 10. Take Antimonial Powder, from one to three grains.
Confection of Roses, six grains.

Make them into a bolus, to be taken every four hours.

Or,

11. Take James's Powder, five grains for a dose.

Or,

12. Take Powdered Ipecacuanha, three grains.

the uncertainty with which Dr. James's Powder and the pulvis antimonialis act, the tartarized antimony may be considered as preferable in many cases.

To increase the diaphoretic effect of these medicines, the patient should take frequent small draughts of some tepid liquor.

Warm bathing, and fomenting the lower extremities, are remedies sometimes employed in fever to produce moderate sweating. Where these relieve delirium, induce sleep, and are easily borne by the patient, we may be assured of their propriety. Sweating, however, when excited in fevers by stimulant, heating, and inflammatory medicines, is almost sure to prove hurtful. It likewise proves injurious, when excited by much external heat: as also where, instead of relieving, it rather increases the frequency and hardness of the pulse, the anxiety and difficulty of breathing, the headach, and delirium. When sweating is partial, and confined to the superior parts of the body, it will be more likely to prove hurtful than salutary.

If a cough accompanies the fever, and a rawness and soreness in the fauces, together with a tightness at the chest, are present, then, besides pursuing the antiphlogistic plan before advised, we may give demulcents* in frequent repeated doses.

Should a vomiting arise in the course of this fever, and the irritation prove considerable, a saline draught may be taken in the act of effervescence, or it may be administered so as that this shall take

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Confect. Cort. Aurant. gr. vj. M.
ft. Bolus.

Vel,

13. ℞ Antim. Tartarizat. gr. jss.
Aq. Fontan. f. ℥vj.
Syrup. Croci, ℥j. M.
ft. Mistura, cujus sumat cochl. ij. magna 2da vel 3tia hora.

* 14. ℞ Cetacei, ℥ij.
Vitel. Ovi, q. s. ad solût.
Dein adde
Aquæ Pulegii, f. ℥iv.
Aceti Scil. f. ℥ij.
Syrup. Tolutan. f. ℥iij. M.
ft. Mistura, cujus sumat paululum subinde.

Vel,

15. ℞ Mucil. G. Acaciæ,
Aq. Fontan. āā ℥iij.
Potassæ Nitrat. ℥j.
Vini Antimon. Tart. ℥ xxx.
Syrup. Limon. f. ℥ss. M.
ft. Mistura, Cochl. ij. pro dos, tusse urgenti sumenda.

Confection of Orange Peel, six grains.
Form them into a bolus, to be taken every four hours, as the former.

Or,

13. Take Tartarized Antimony, one grain and a half.
Pure Water, six ounces.
Syrup of Saffron, one drachm.
Of this mixture, give two table spoonsful every second or third hour.

* 14. Take Spermaceti, two drachms.
Yolk of an Egg, sufficiency to dissolve the former.
Then add
Penny Royal Water, four ounces.
Vinegar of Squill, two drachms.
Syrup of Tolu, three drachms.
Mix them well together, and let the patient take a mouthful from time to time.

Or,

15. Take Mucilage of Acacia,
Pure Water, each three ounces.
Nitrate of Potass, one drachm.
Wine of Tartarized Antimony, forty drops.
Syrup of Lemons, half an ounce.
Mix them, and give about two large spoonsful occasionally, or when the cough is troublesome.

place in the stomach. The manner of doing it is by giving the patient about half an ounce of lemon juice mixt up with a little mint water and syrup, and immediately afterwards, about a scruple of the potassæ subcarbonas, dissolved in an ounce of common water. If the irritation at the stomach is not abated by this means, we may add a few drops of tinctura opii with a little aqua cinnamomi.

In this fever partial evacuations, such as purging and sweating, which have no tendency to prove critical, often arise. When these happen, we should, by all means, put a stop to them. The former may be checked by astringents, as below,* or as advised under the head of diarrhœa; and the latter, by keeping the patient cool, by washing his body frequently with a sponge dipped in cold water, and giving him refrigerants.

We may distinguish critical evacuations from those which are not so, by attending to the appearances which take place in other parts of the system. For instance, if a purging should arise, and the tongue continue foul, and the skin dry, without any abatement of heat and thirst, then we may regard it as by no means critical; but if, on its taking place, the tongue becomes clean and moist, the pulse moderates, the febrile symptoms abate, and the skin has a gentle breathing sweat universally diffused over it, then a crisis may be expected.

In the progress of this fever it sometimes happens that particular parts of the body are much affected, and that there prevails either great oppression of breathing, or that violent pains in the head, stupor, or delirium ensue. In all such cases, the application of a blister near the part affected will be proper, and relief will often be quickly procured by it. Where there is any unusual coldness of the extremities, with a sinking pulse, blisters to the inside of the legs will likewise prove highly serviceable. Their efficacy in such cases may be increased by the application of stimulating cataplasms† to the soles of the feet and palms of the hands. Camphor, ammonia, musk, and æther, are remedies which may be used at the same time, either separately or combined together; and the patient should be allowed a liberal use of wine, both in a diluted and undiluted state.

When we administer camphor, in this or any other disease, in a

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* 16. ℞ Confect. Aromat. ℥ij
Aq. Cinnam. f. ℥j.
— Fontan. f. ℥iij.
Tinct. Catechu, f. ℥ij. M.
ft. Mistura, cujus sumat Cochl. ij. magna post singulas sedes liquidas.

* 16. Take Aromatic Confection, two drachms.
Cinnamon Water, one ounce.
Pure Water, three ounces.
Tincture of Catechu, two drachms.
Mix them, and let two table spoonsful be taken after every liquid stool.

† 17. ℞ Seminum Sinapeos Crass, Medullæ Panis, āā ℔ss.
Aceti quantam satis sit. M. et fiat Cataplasma.

† 17. Take Bruised Mustard Seed, Crumb of Bread, each half a pound.
Vinegar, a sufficiency to form the whole into a Cataplasm.

liquid form, in order to render it properly diffusive in water, and obtain its full effect, we should (instead of trusting to the mistura camphoræ of the London Dispensatory, which contains but a small proportion of the resin) dissolve it in a little rectified spirit, or expressed oil, and then triturate it well with mucilage of gum accacia previous to adding the water. By triturating camphor with milk, it is nearly as readily dissolved as with rectified spirit. The mistura camphorata may be prepared agreeably to the annexed prescription,* and none of the camphor will be lost by precipitation.

Severe pains in the head, accompanied with a throbbing of the arteries, or any degree of delirium, and which have not been subdued by leeches to the temples, or a blister to the nape of the neck, may sometimes be relieved by the application of linen rags, moistened in cold evaporating fluids (such as water, with an addition of æther or vinegar) to the forehead or shaven scalp. Under this cooling process I have known tranquillity and sleep succeed to restlessness in the course of a few hours.

In synochus there is often a great interruption to sleep; and the more violent the fever, the greater in general is the interruption. It is unfortunate, however, that it cannot be procured with safety to the patient, as opium proves generally prejudicial in all fevers, except those of the typhous kind. To procure rest, therefore, in that which I am treating of, we must be contented in directing him to be kept as still and quiet as possible. If necessity obliges us to a use of sedatives, the spiritus ætheris nitrici, and Hoffman's liquor, will be the least exceptionable.

Where this fever is kept up merely by weakness and irritability, opium, given in small doses, may be proper. If it is found to procure refreshing sleep, the dose may be repeated the ensuing night; but if the rest has been much disturbed, its use ought to be discontinued.

By introducing opium into the system by means of friction, as advised under the head Cholera Morbus, it possibly might not be attended with any injurious effect. In this fever, as well as in all others, where we wish to procure sleep, and cannot have recourse to opium, on account of delirium being present, we may employ some of the preparations of the hop, or humulus lupulus, such as its extract or tincture. Hyoscyamus is now and then given under similar circumstances with benefit.

This fever, is, in some instances, continued and kept up solely by debility, as has been just mentioned. In such cases, if the symptoms are mild, we may venture to prescribe a use of the cinchona bark; and as it will be more likely to sit easy on the

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* 13. ℞ Camphoræ, ℥ss. solv. in
Lactis Vaccinæ, ℥ij. dein adde
Aq. Puræ, ℥vi. f. M.
ft. Mistura.

* 13. Dissolve Camphor, half a drachm, in Fresh Milk, two ounces, then add
Pure Water, six ounces.
Mix them together.

stomach in the form of decoction* or infusion,† these preparations of it will here be preferable to giving it in substance. If, on a trial, the patient sleeps well, breathes easily, and does not find any increased heat, we may then venture to go on with it: but if, on the contrary, it produces restlessness, difficulty of breathing, &c., its use should be omitted.

In the continued fevers of warm climates, we should by no means wait for a complete crisis, in order to administer the bark of cinchona. In these it will be prudent to embrace even the least remission, let it be ever so imperfect, or of short duration; as likewise to give it in as large doses as the stomach will bear, and to repeat these frequently. The same attention must, however, be paid to the effects it produces, as have been mentioned, or may hereafter be noticed.

In cold climates it is usual to wait for a regular intermission before the cinchona is given. As a tonic, this medicine has acquired the greatest celebrity in all febrile cases, and is, therefore, usually preferred to all others; its effects are evidently more obvious when given in substance, than in any other form. About a drachm of the powder is a common dose, and this may be repeated every two or three hours, according to the exigency of the case. Ten or twelve drops of the acidum sulphuricum dilutum may be added to each dose. The bark of cinchona is apt, at first taking it, to affect the bowels, and pass off by stool with many people. When this happens, five or six drops of the tinctura opii, or about half a drachm of the tinctura catechu, or that of kino, may be added to each dose.

With some persons the cinchona bark will not sit easy on the stomach almost in any shape. In such cases we may substitute the use of quassia,‡ or any of the other astringent bitters noticed under the head of Intermittents.

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* 19. ℞ Cort. Cinchonæ Contus, ℥i.
Aq. Fontan. Ojss
Coque add Oj. Col. dein adde
Tinc. Calumbæ, f. ℥j. M.
ft. Decoctum, de quo sumat cochl. iij. magna quartis horis.

† 20. ℞ Cort. Cinchonæ in pulv. trit. ℥ss.
Aq. Bullient. f. ℥vj. post horam
Colat. adde
Tinct. Cort. Aurant. f. ℥ij. M.
ft. Infusum, cujus sumat cochl. iij. tertiis horis.

‡ 21. ℞ Quassiæ, ℥ij.
Aq. Bullient. f. ℥vj. post horam
Colat. adde

* 19. Take Peruvian Bark bruised, one ounce.
Pure Water, one pint and a half.
Boil these slowly till reduced to one pint, then strain off the liquor, and add
Tincture of Calumba, one ounce.
Mix them, and of the decoction let three table spoonsful be taken every four hours.

† 20. Take Peruvian Bark, reduced to a coarse powder, half an ounce.
Boiling Water, six ounces.
Infuse them for an hour, strain off the liquor, and add
Tincture of Orange Peel, two drachms.
Mix them, and let three table spoonsful be taken every three hours of this infusion.

‡ 21. Take Quassia, two drachms.
Boiling Water, six ounces.
Strain off the liquor after one hour's infusion, and add

On a recovery from a fever the patient should cautiously avoid any fatigue, exposure to cold, or improper food. As restoratives, a generous diet, with a moderate use of wine, will be serviceable; and if the season of the year will admit of cold bathing, it will likewise be advisable. A change of air, with moderate daily exercise, either in a carriage or on horseback, will prove powerful auxiliaries in enabling the convalescent to regain his strength. Where the appetite is defective, we may prescribe stomachic bitters.—See Dyspepsia.

SYNOCHA, OR INFLAMMATORY FEVER.

Synocha is a fever with much increased heat; a frequent, strong, and hard pulse; the urine red; the animal functions but little disturbed, although at an advanced stage the sensorium is apt to become much affected. We may readily distinguish synocha from either typhus mitior or typhus gravior by its being attended with symptoms of an inflammatory nature. It makes its attack at all seasons of the year, but is most prevalent in the spring; and it seizes persons of all ages and habits, but more particularly those in the vigour of life, with strong elastic fibres, and of a plethoric constitution. It is a species of fever almost peculiar to cold and temperate climates, being rarely met with in very warm ones, except among Europeans lately arrived; and even then the inflammatory stage is of short duration, as it soon assumes the typhoid type.

The exciting causes are, sudden transitions from heat to cold, the application of cold to the body when warm, swallowing cold liquors when much heated by exercise, too free a use of vinous and spirituous liquors, great intemperance, violent passions of the mind, exposure to the rays of the sun, topical inflammation, the suppression of habitual evacuations, the drying up of old ulcers, and the sudden repulsion of eruptions. It may be doubted if this fever ever originates from personal infection; but it is possible for it to appear pretty generally among such as are of a robust habit, from a peculiar state of the atmosphere.

It comes on with a sense of lassitude and inactivity, succeeded by vertigo, rigors, and pains over the whole body, but more particularly in the head and back; which symptoms are shortly followed by redness of the face, throbbing of the temples, great restlessness, intense heat, and unquenchable thirst, oppression of breathing, and nausea. The skin is dry and parched; the eyes

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Tinct. Calumb. —— Card. Compos. āā f. ℥ss. ft. Mistura, cujus capiat Cochl. ij. tertiis horis cum Acidi Sulphur. Diluti ♏ x.	Tincture of Calumba, Compound Tincture of Cardamoms, each half an ounce. Mix them, and take two table spoonsful every three hours, with fifteen drops of Diluted Sulphuric Acid.

appear inflamed, and are incapable of bearing the light; the tongue is of a scarlet colour at the sides, and furred with white in the centre: the urine is red and scanty; the body is costive; and there is a quickness, with a fulness and hardness in the pulse, not much affected by any pressure made on the artery. Its pulsations are from 90 to 130 in a minute; and when blood is drawn, it exhibits a yellowish or buffy crust on its surface, which is the coagulable lymph or fibrin. If the febrile symptoms run very high, and proper means are not used at an early period, stupor and delirium come on at a more advanced stage; the imagination becomes much disturbed and hurried, and the patient raves violently.

The disease usually goes through its course in about fourteen days, and often terminates critically, either by a diaphoresis, diarrhœa, hæmorrhage from the nose, or the deposit of a copious sediment in the urine; which crisis is usually preceded by some variation in the pulse. In many instances it however terminates fatally.

Our judgment, as to the termination of the disease, must be formed from the violence of the attack, and the nature of the symptoms. If the fever runs high, or continues many days, with great action of the heart and arteries, flushed, turgid face, red eyes, intolerance of light, with vertigo, or early stupor and delirium, the event may be doubtful; but if to these are added, picking at the bed-clothes, startings of the tendons, involuntary discharges by stool and urine, and hiccups, it will be then certainly fatal. On the contrary, if the febrile heat abates, and the other symptoms moderate, and there is a tendency to a crisis, which is marked by a universal and natural perspiration on the body; by the urine depositing a lateritious sediment, and by the pulse becoming more slow or soft; or by a hæmorrhage from the nose; diarrhœa supervening; or the formation of abscesses; we may then expect a recovery. In a few cases, this fever has been succeeded by mania.

On opening those who die of an inflammatory fever, an effusion is often perceived within the cranium; and now and then topical affections of some of the viscera are to be observed.

From the symptoms which attend this disease, it is evident our endeavours should be early exerted to avoid the mischief that may ensue from general inflammation; and as evacuation by bleeding is the chief mean we can confide in, it should be resorted to on the first of its attack; and one large bleeding at this period will have a much better effect than repeated small ones afterwards. If the symptoms run high, therefore, and the person is young and plethoric, twelve or sixteen ounces may be drawn off at once from the arm through a large orifice. In repeating the operation, we are to be governed by the effect it produces on the pulse, and by the appearance the blood puts on after standing some time. If the former continues full, strong, and tense, and the latter exhibits a buffy, sizy coat on its surface, the bleeding should be repeated

by all means, but in smaller quantity than before. Blood-letting relaxes the vascular system, diminishes its action, and takes off plethora. The pulse, in this fever, is apt, however, to become fuller and stronger after bleeding, which may easily be explained; for the plethora may be so great as to distend the vessels beyond their proper tone: in such cases the vessels cannot act fully, and the pulse is contracted; but when the plethora is taken off by copious bleeding, and the vessels are allowed to contract properly, the pulse becomes fuller, which shows that the remedy has been proper, and should induce us to repeat the operation if the case requires it.

It may be difficult to determine whether drawing blood from the temporal artery ought not to be preferred in severe attacks to venesection at the arm. Both, indeed, will relieve the headach, giddiness, and stupor; but I conceive that a more permanent benefit will be derived from the former.

When the fever has been of several days' standing, and the head is much affected either with severe pain or delirium, topical bleeding, by the application of three or four leeches to each temple, may be preferable to any other mode of drawing blood.

Applying linen cloths, wetted in cold water, together with æther or vinegar, to the forehead and temples, or over the shaven scalp, may be attended with some advantage in such cases.

With the view of diminishing inflammation and general excitement, digitalis has been proposed as a remedy in this disease, after having employed proper venesection; and probably it may prove serviceable.

If any nausea prevails at the commencement of the disease, the stomach may be relieved by making the patient drink one or two cupsful of an infusion of the flores anthemidis; but should these simple means not be attended with the desired effect, he may then take a table spoonful of an emetic solution*, every quarter of an hour, until sufficiently eased.

To obviate costiveness, one or two motions should be procured daily, by means either of some aperient medicine†, or by laxative

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* 1. ℞ Antimon. Tartarizat. gr. ij.
Aq. Fontanæ, f. ℥iij.
Syr. Croci, f. ℥j. M.

† 2. ℞ Pulp. Tamarind. ℥ss.
Potassæ Supertartrat. ℥ij.

Aq. Bullientis, ℥v.

Colat. adde
Aq. Cinnam. f. ℥j.
Antimon. Tartarizat. gr. j. M.
Sumat Cochl. iv. et repetatur dos. post horas iij. nisi alvus prius respondeat.

* 1. Take Tartarized Antimony, 2 grains.
Pure Water, three ounces.
Syrup of Saffron, one drachm.
Mix them.

† 2. Take Pulp of Tamarinds, half an ounce;
Supertartrate of Potass, two drachms.
Boiling Water, five ounces; strain off the liquor, and add

Cinnamon Water, one ounce.
Tartarized Antimony, one grain.
Take four table spoonsful, and repeat the dose in three hours, should no motions be procured in that time.

clysters*. In synocha, cathartics, particularly the saline ones, will prove singularly useful. If the stomach is in an irritable state, we can substitute a few grains of the hydrargyri submurias, made up into pills, with a small quantity of cathartic extract, instead of the other laxative medicines.

To abate thirst the patient should be directed to drink frequently of diluting liquors, acidulated with lemon juice or potassæ supertartras. He may likewise take small and frequently repeated doses of the nitrate of potass†; or, as a refrigerant, he may be allowed to drink freely of cold water. For the purpose of moderating or abstracting the morbid excess of heat, various parts of the body should be sponged frequently with cold water. Cool air may be freely admitted also, as it has been found that a person in fever may be kept much cooler than one in health without uneasiness or harm. The acid fruits, such as oranges, &c., will be very proper.

Sudorifics do not appear to be advisable in this fever, as they might bring on profuse sweating; and it is not possible to keep the body warm without producing a considerable increase of heat. The neutral salts may be given in any of the forms advised under the head of Simple Fever, every two or three hours, joined with small nauseating doses of tartarized antimony, or the like. A pediluvium at night may assist their effect.

Should the breathing be oppressed, or should stupor or delirium arise, it will then be right to apply a blister in the neighbourhood of the part so affected. If the pulse sinks, and the extremities become cold, the application of sinapisms to the soles of the feet will be proper. Camphor, æther, ammonia, and cordials, will be proper remedies on such occasions.

In this fever, as in most others, sleep is much interrupted, and from a want of this, delirium often arises: opium here would be an uncertain medicine, for, should it fail to procure rest, the delirium would be greatly increased by it. It should therefore be

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Vel,

3. ℞ Infus. Sennæ Compos. f. ℥jss.
Magnes. Sulphat. ℥iij.
Mannæ Optim. ℥ij. M.
ft. Haustus aperiens.

* 4. ℞ Infusi Sennæ C. f. ℥xss.
Sodæ Sulphát. ℥j.
Ol. Olivæ, f. ℥ss. M.
ft. Enema.

† 5. ℞ Potassæ Nitrat. ℥ij.
——— Supertart. ℥iij.
Antimon. Tartarizat. gr. jss. M.
ft. Pulvis, in Chart. vj. dividend. Sumat j. dosem tertia hora.

Or,

3. Take Compound Infusion of Senna, one ounce and a half.
Sulphate of Magnesia, three drachms.
Manna, two drachms.
Mix them for an aperient draught.

* 4. Take Compound Infusion of Senna, ten ounces and a half.
Sulphate of Soda, one ounce.
Olive Oil, half an ounce.
Mix them for a clyster.

† 5. Take Nitrate of Potass, 2 drachms.
Supertartrate of Potass, three drachms.
Tartarized Antimony, one grain and a half.
Mix them, and divide the powder into six doses, of which one is to be taken every three hours.

given only in cases of imminent danger, and even then, only in small doses frequently repeated, paying a strict attention to the effect it produces. In other instances, we should be contented with giving directions for the patient to be kept as quiet as possible.

Probably we might employ some of the preparations of the humulus lupulus (hop), or hyoscyamus, in this fever with benefit, in lieu of opium. In cases of severe delirium, threatening phrenitis, might not a use of the circular swing, noticed under the head of Mania, produce a good effect?

Throughout the whole course of the disease, the patient is to abstain from solid food and animal broths, supporting nature with gruel, and preparations of barley, sago, tapioca, &c.

His chamber is by no means to be kept warm, either by fires or by being closely shut up, as is too generally the case; on the contrary, it should be of a proper temperature, by allowing the admission of cool air into it from time to time. His bed ought to be lightly covered with clothes.

On his recovery a strict attention should be paid to regimen, scrupulously avoiding to overload the stomach, and partaking only of such things as are light, nutritive, and easy of digestion: all other causes likely to induce a relapse, are also to be carefully shunned.

Fresh air, gentle exercise on horseback or in a carriage, agreeable company, and a moderate use of wine, will greatly contribute to the recovery of convalescents. Should the appetite not readily return, or the digestion prove weak, stomachic bitters*, conjoined with the cinchona bark, may be advised.—See Dyspepsia.

TYPHUS MITIOR, OR NERVOUS FEVER.

Typhus is derived from τυφος, stupor, a degree of sensorial affection which generally supervenes, sooner or later, in most continued fevers, and which is universally allowed to be a prominent symptom of that to which this name has been especially applied. Typhus mitior may be distinguished from typhus gravior at its commencement, by the attack being more gradual, and the symptoms much milder: in the progress of the disease, by the absence of those symptoms of putrescence enumerated in typhus gravior; and by its being accompanied with less heat and thirst, less frequency of the pulse, and no bilious vomitings.

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6. ℞ Infus. Gentian. C. f. ℥v.
Tinct. Cort. Cinchonæ, f. ℥ss.
—— Calumbæ, f. ℥iij. M.
Capiat Cochl. ij. ter. in die. Adde pro re nata Acid. Sulph. Dilut. ♏ x. ad xv.

* 6. Take Compound Infusion of Gentian, five ounces.
Tincture of Bark, half an ounce.
———— Calumba, three drachms.
Mix them, and give two table spoonsful thrice a day, adding occasionally from fifteen to twenty four drops of the Diluted Sulphuric Acid.

It principally attacks those of weak lax fibres; those who lead a sedentary life, and neglect proper exercise; those who study much; and those who indulge freely in enervating liquors, sensuality, and other debaucheries. It likewise is apt to attack those who are weakened from not using a quantity of nutritive food, proportionable to the exercise and fatigue they daily undergo; hence it is very prevalent among the poor. It is often generated in jails, hospitals, transport and prison ships, ill-constructed and crowded barracks, workhouses, and the ill-ventilated apartments of the indigent. It is also to be met with very frequently in the damp and dirty cellars of the poorer class of manufacturers in large towns.

In warm climates, typhus sometimes occurs, and continued fevers, of most kind, are apt to degenerate into fever of a typhoid type. It is, however, most prevalent in temperate and cold climates. In Great Britain typhus is favoured by a low temperature, being most prevalent in the months of winter, generally abating, or disappearing as the heat of summer advances, and often prevailing in a considerable degree in cool wet autumns.

Typhus appears to have two origins, one from a spontaneous generation of the disease in the subject affected by it, and the other, from external infection; but the most general cause of typhus mitior is contagion, communicated through the medium of an impure or vitiated atmosphere, by concentrated effluvia arising from the body of a person labouring under the specific disease; but whatever debilitates the system or depresses the mind, may induce a state of predisposition more readily to be influenced by the operation thereof. Thus, perhaps, we may explain the fact of the ready spreading of an epidemic fever among an army which has for some time suffered great fatigue and exhaustion, as happened with that under the command of Sir John Moore on his retreat to Corunna, or among a people who are ill supplied with nutritive food; whence war, famine, and pestilence, have been observed to succeed each other, or to occur together, from the earliest periods of history. A season of continued heat, combined with moisture, appears also to predispose the human constitution to receive the impression of contagion: for contagious diseases more generally become epidemic in the autumnal period of the year.

In the origin and progress of typhus and such-like fevers, it is undeniable that contagion is the most powerful agent in propagating the disease; but still many of these fevers, though not contagious at their origin, become so in their progress and decline, and in some instances generate others of a much worse description than the original. In all probability the contagious or non-contagious nature of typhus is dependent partly on the quantity or concentration of the effluvium thrown off from the body of the patient, and partly upon the closeness or openness of his apartment; or, in other words, the chance of its propagation from one

individual to another is greatly dependent on the above circumstances.

In a number of persons exposed to the contagion of typhus, some (although rarely) are attacked on the third or fourth day, and others again on the thirteenth; but the most common periods of sickening, after exposure, are from the end of the first week to the middle of the third.

Dr. Haygarth * has employed much attention for many years to ascertain, by numerous facts which had occurred to himself and to other practitioners with whom he had professional intercourse, in what manner the contagion of typhus is propagated, in order to discover how it may be prevented. The conclusions which he has deduced from these facts are of very great importance, for the prevention of misery and preservation of life. They may be briefly comprised, he thinks, in the following natural laws of typhous contagion.

I. Miasms (or contagious vapours), issuing from patients ill of typhus, or from the poison contained in their dirty clothes, utensils, &c., are diffused or dissolved in air, and thus infect persons who are exposed to them.

II. These miasms render the air infectious but to a little distance from the patient, or the poison. They never extend so far as to infect persons in an adjoining street, nor an adjoining house, nor in an adjoining room of the same house, nor even in the patient's own chamber, if large, airy, and kept clean†.

III. Not more than one person in twenty-three is naturally exempted from typhus; for when one hundred and eighty-eight men, women, and children, were exposed fully to the typhous contagion, for days and nights together, in small, close, and dirty rooms, all of them except eight were infected with this fever‡.

IV. The miasms of variolous, scarlet, typhous, and other contagions, do not render clothes, &c., exposed to them contagious§.

V. Hence, it follows, that the only way by which typhus can be conveyed from the patient's room, so as to infect others out of it, is in the form of contagious dirt, as dirty clothes, utensils, &c., and consequently that the contagion may be completely destroyed by washing them clean.

VI. The typhous poison remains in the body in a *latent* state from about the tenth to the seventy-second day ‖, reckoning between the time of exposure to the contagion and the commencement of the fever. This law of nature was discovered by Dr. Haygarth in 1781, from observations on seventy-two cases. It was fully confirmed by Dr. Bancroft ¶ in 1809, from observa-

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* See his Letters to Dr. Percival on the Prevention of Infectious Fevers.

† See his Letter to Dr. Percival, p. 76. ‡ See Letter, p. 31.

§ See Letter, p. 54; and his Inquiry, pp. 67, 86; and his Sketch, pp. 217, 369, 384, 386, 404, 542; and the cases related under Scarlet Fever, where 65 young ladies were not infected, though approached by clothes exposed to contagious miasms.

‖ See Letter, pp. 64, 69. ¶ See his Essay on Yellow and Typhous Fevers, p. 515.

tions on ninety-nine cases, who as orderlies and nurses attended the army which had arrived at Plymouth from Corunna, infected with typhus: they had not been previously exposed to contagion. He observed that the latent period of typhus varied from the thirteenth to the sixty-eighth day.

From these laws of contagion observed by nature, Dr. Haygarth concludes that typhus may be easily and certainly prevented by *ventilation* (in large, airy, and clean rooms); or by *separation* (into an hospital, or into an adjoining room of the same house where practicable); or, especially by cleanliness*, which entirely destroys the poison, wherever it can be completely accomplished.

On these principles, the fever wards of the Chester Infirmary were established in 1783, the House of Recovery at Manchester in 1796, and since that time fever hospitals at Liverpool, London, Edinburgh, Dublin, and most of the large towns in Great Britain and Ireland. It is highly probable, that typhus always proceeds from a specific poison, like the small-pox, measles, &c. The opinion that typhus is generated by putrefaction, filth, bad diet, or accumulated human exhalations from many persons crowded together in a close room, has been completely refuted by Dr. Bancroft†, as Dr. Haygarth alleges, from numerous well authenticated facts.

On the whole, it is manifest that typhus might be exterminated from any town or district by easy and practicable regulations. This conclusion Dr. Haygarth thinks is not conjectural. It is established on far stronger and more positive evidence than most other kinds of medical knowledge. Ever since 1783, the physicians of Chester have preserved their fellow-citizens from typhus, by requiring the lodgings of the patients (generally strangers) to be completely cleansed on their removal into the fever wards of the Infirmary‡. Other towns have established fever hospitals, but to very little purpose, because they have neglected, what is incomparably of most importance, to cleanse thoroughly from all contagious dirt the houses whence infectious patients had been removed.

It may not be irrelevant to add a few words on the manner in which the matter of contagion may be admitted into the body. It may be conveyed into the stomach by the saliva, or it may be absorbed by the skin; but daily observation may satisfy us, that by far the most ordinary way is inhalation by the lungs. It is in this way applied to the delicate membranous expansion which covers all the minute vessels distributed with such an infinitude of branches around the air-cells of the lungs.

The most general opinion which has been entertained of typhus

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* See Dr. Haygarth's Letter to Dr. Percival, pp. 72, 89.

† See his Essay on the Yellow Fever, &c. pp. 37—156.

‡ See Dr. Haygarth's Letter to the Physicians of the Fever Hospital in Dublin, printed by the Society for bettering the Condition of the Poor in Ireland.

fever is, that in all its stages it is a disease of real debility; but a modern writer* of some eminence tells us, that extensive observation has convinced him, that genuine typhus, so far from being of an asthenic nature, is most certainly an affection of excitement, or of congestion in its first stages, demanding at such times the decidedly evacuant plan. By him typhus has been arranged under three varieties, viz. the simple, the inflammatory, and the congestive. I will not pretend to say, whether or not these divisions are either necessary or judicious; but it must at the same time be admitted, that from a variety of circumstances, typhus may, however simple in its outset, become connected with local inflammation and determinations of blood to the head, the chest, or abdominal viscera; hence, occasionally there is considerable intellectual derangement; or there is uncommon irritability of the stomach, intestines, and liver; or there is a troublesome cough and pneumonic affection.

Typhus mitior generally comes on with a remarkable mildness in all its symptoms; and although the patient experiences some trifling indisposition for several days, still he has no reason to suspect the approach of any severe disease. At first no rigors are perceived, there being only a slight chilliness, which is not succeeded by any increase of heat or redness of the face; on the contrary, it is unusually pale and sunk. He perceives, however, some degree of lassitude, and apparently of debility, with anxiety, dejection of spirits, sighing, and a loathing of food; and towards evening these affections are somewhat increased.

In the course of a few days, and as the disease advances, there arise a difficulty of breathing, oppression at the chest, pains in the head, accompanied with a confusion of ideas: there is great depression of strength apparently, even occasionally to fainting, whenever the patient attempts to sit up; the tongue becomes dry, and is covered with a dark brown fur; the teeth are thickly incrusted with the same; the pulse is small, low, and frequent, and now and then intermits; cold clammy sweats break out on the forehead and backs of the hands, while the palms glow with heat; the urine is pale and watery, like whey; the whole nervous system is much affected with tremors and twitchings; involuntary motions of the muscles and tendons arise; the patient picks at the bedclothes, and either mutters to himself or talks incoherently. There is seldom, however, any high degree of delirium, nor is this fever ever attended with violent ravings, but there is usually a dilatation in the pupils of the eyes.

In simple typhus, there is commonly some remission of the fever towards the morning, and the patient in general is less oppressed at that period than at any other throughout the twenty-four hours; but as the excitement gains ground, the debility increases, and

* See Practical Illustrations of Typhus, &c., by J. Armstrong, M.D.

may be observed to be greatest when the exacerbation is at its highest point in the evening.

In the progress of the disease, the system is unequally affected; for sometimes headach, restlestness, and uneasiness prevail in a high degree, while at the same time the tongue is clean and moist: and at other times, while there is no headach or restlestness, the tongue will be dry, foul, and incrusted with dark fur, and profuse sweats will break out. This fever, moreover, is not only thus irregular in affecting various parts of the body differently, but it is also irregular in its exacerbations; and these, instead of taking place in the evening, will arise often in the morning. Again, sometimes the fever is very violent for the first three or four days; it then diminishes for a time, and then perhaps increases again. Evacuations, such as sweating and purging, are very apt to ensue in the course of the disease, which never fail to exhaust the patient.

In typhus fever, a great discharge of saliva sometimes occurs; but as it now and then continues for a considerable time without affording any relief to the patient, it may be concluded to arise from some accidental circumstance, perhaps not unlike to the ptyalism that sometimes takes place in hysteria. In many instances, the spitting is so viscid and ropy as to inconvenience the patient very much, and by clogging up the fauces, greatly to impede both deglutition and respiration. In such cases, moreover, the tongue and the whole of the mouth are frequently beset with aphthous ulcerations.

Typhus mitior frequently runs on for some weeks, and produces such a state of debility as to destroy the person from that cause alone, or it degenerates into typhus gravior; but when it terminates favourably, it usually goes off about the fourteenth or twentieth day, perhaps, either by diarrhœa, or by a gentle moisture diffused equally over the whole body; but often it exceeds a month in duration, and terminates at last without any evident crisis.

Profuse evacuations by sweating or purging, much watchfulness, sinking of the pulse, great incoherency of ideas, mutterings, picking at the bed-clothes, considerable dilatation of the pupils of the eyes, involuntary discharges by urine and stool, starting of the tendons, and hiccups, point out the near approach of death; whereas, on the contrary, the pulse becoming fuller and more slow, the tongue moist, respiration free, a gentle moisture coming on about the fourteenth day, deafness ensuing, tumours appearing behind the ears, or miliary eruptions, unattended by profuse sweats, being perceived on the body, promise a favourable termination.

From the great disposition to relapse in the severer modifications of this fever, and the patient not being always safe until he is perfectly recovered, it will be advisable to be cautious in the

prognosis or opinion we may give to the relatives of the sick, as to the final result.

The usual appearances on dissection are, a softness and flaccidity in the solids; a dissolved state of the fluids, particularly of the blood; collections of sanious matter in the different cavities; turgescence and inflammation of the thoracic and abdominal viscera; and in the interior parts of the brain, increased vascularity and collections of a serous fluid. In some cases, however, accompanied by great intellectual derangement from the beginning, the minutest dissection after death has not been able to detect the least vestige of cerebral disease.

From the very gradual manner in which this fever comes on, the great mildness of the symptoms at its commencement, and the time that usually elapses previous to absolute confinement, it is seldom that practitioners have it in their power to cut short its progress by a timely exhibition of proper remedies. Typhus is a disease, which, once formed, it is impossible to stop; it will run its course, and our treatment of it must consist in attending to its progress, and mitigating the violence of its symptoms when necessary.

If there is any nausea or vomiting at the time of applying for advice, it will be right to recommend a gentle emetic of about fourteen or sixteen grains of ipecacuanha, to be immediately taken; or should any costiveness prevail, we may prescribe some laxative medicine to carry off the feculent matter; and to ensure and keep up a regular alvine evacuation in the further course of the disease, it will be proper to repeat this from time to time, or to have recourse to emollient laxative clysters. In many instances, however, the stimulus of the latter, being limited merely to the rectum, may not be adequate to procure so complete an evacuation as may be necessary; and therefore, in these cases, we ought to employ aperient medicines that will dislodge and bring off whatever feculent matter may be contained in the bowels, which by retention might be likely to prove highly offensive, as well as irritating. In administering purgatives, we ought, at the same time, to guard against employing them in such doses as to excite unusual secretion into the intestines, or watery stools.—Small doses of hydrargyri submurias with jalap,* or a solution of some mild neutral salt, will be the most proper medicines of this class. With these we may evacuate the contents of the bowels with safety and advantage in typhus, from the commencement to the termination of the fever.

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* 1. ℞ Hydrargyr. Submur. gr. iij.
Pulv. Jalapæ, gr. x.
Syrup. Rhamni, q. s. M.
Fiant pilulæ iij.

* 1. Take Submuriate of Mercury, three grains.
Powdered Jalap, ten grains.
Syrup of Buckthorn, a sufficiency to form the mass, which divide into three pills.

In many cases of typhus mitior, venesection will neither be necessary nor proper; and it should be borne in mind by every practitioner, that the system sooner sinks under depletion by the lancet in typhus, than in merely symptomatic fevers; which peculiarity in the disease should never be lost sight of by the medical attendant, particularly when arising in persons of a delicate frame. Cases do occur, however, where typhus is somewhat complicated with visceral congestions, or with a considerable determination of blood to the head, giving rise to a high degree of stupor, and occasionally to much intellectual derangement. Under these circumstances, an abstraction of blood appears necessary; but it is only at the onset of the fever that blood-letting will be advisable, for when blood is drawn on the second or third day after the attack, it will often be found to have already suffered a change: it will be black, dissolved, and will not coagulate; under which state, depletion will of course be hurtful.

To relieve the cerebral disease at the commencement, where the symptoms run high, topical bleeding from the temples, by means of several leeches, will be most advisable in persons of a delicate constitution; but in full plethoric habits, it may be more proper to draw off six or eight ounces of blood from the jugular vein or arm on the first day of the attack. With regard to venesection in typhus, I would observe, that it is a remedy applicable only to particular cases, but by no means proper in all. A large portion of cases of this fever would be hurt by venesection, and in many, to say the least, it is uncalled for; but, on the other hand, there are some, and those the most formidable that fall under our observation, which as imperiously require it. The legitimate object of blood-letting in this disease, is the checking those dispositions to the inflammatory action which are often met with in severe cases. A judicious abstraction of blood, in the early stage of fever, not only diminishes the headach, the great sensibility to light and sound, as also the delirium, but apparently shortens the course of the disease.

That genuine acute inflammation does not always, or perhaps even in the majority of cases, attend typhus, may, I think, be admitted; yet in most of the worst cases, and by consequence in most of those which come under posthumous examination, there are unequivocal evidences of genuine inflammation, accompanied with those appearances of venous congestion, which frequently distinguish these diseases from the proper phlegmasiæ.

In cold latitudes, and in the winter season of the year, it is by no means an uncommon occurrence to meet with typhus complicated with more or less of topical inflammation of the thoracic viscera, constituting pneumonia typhodes. In such cases, I have known venesection to have been employed; but even in these, unless resorted to on the onset of the disease, it has appeared to me to be detrimental; and in two instances which occurred under my observation, seemed indeed to have destroyed the patients.

Instead, therefore, of having recourse to the lancet, where topical inflammation of the viscera of the thorax attends on typhus, and has been of some days' continuance, I would recommend drawing blood from the chest, either by means of a few leeches, or by the application of a scarificator and cupping-glass.—See Pneumonia Typhodes.

Affusing the body with cold water, is one of the most powerful and efficacious means which we can make use of in typhus fever; but its effects will be more salutary in proportion as it is adopted early, or during the first stage of the disease. Such being an indisputable fact, established upon the firmest basis, we ought always to employ it during the first, second, or third day of excitement. The affusion may be repeated four or five times in the twenty-four hours, using spring water impregnated with common salt, when sea-water is not to be procured, the feet of the patient being at the same time placed in warm water. The operation being over, they are to be dried, the patient put to bed, and some tepid bland fluid given to him, with the view of promoting a gentle perspiration.

In a more advanced stage of the fever, it will be advisable to substitute tepid affusion; and when we do so, a small portion of ardent spirit may be added to the water, with the view of increasing the evaporative process, on which its efficacy depends in a great measure. Vinegar is usually substituted on such occasions, but the former is preferable.

We are informed by Dr. Currie,* that the safest and most advantageous time for using cold water, either in aspersion or affusion, (but he gives a preference to the latter,) is when the exacerbation is at its height, which is marked by increased flushing, thirst, and restlessness; or immediately after its declination has begun, which induced him to direct its being employed from six to nine o'clock in the evening; but he thinks that it may be used at any time of the day, when there is no sense of chilliness present, when the heat is steadily above what is natural, and when there is no general or profuse perspiration. During the cold stage of the paroxysm of fever, while there is any considerable sense of chilliness present, or where the body is under profuse sensible perspiration, this remedy ought never to be employed, as we might extinguish life by it.

When cold affusion is used in the more advanced stage of typhus, where the heat is reduced, and the debility great, some cordial, such as wine warmed with an addition of spice, or even brandy, should be given immediately after it. In the early stage of the disease, cold affusion appears to cut short the progress of the disease. At more advanced periods, when the strength of the patient, and other circumstances, will admit of its application, it

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* See his Medical Reports on the Effects of Water in Fevers, &c.

will seldom fail to moderate the symptoms, and materially contribute to a favourable termination.

Whilst cold water dashed forcibly from a pail, or falling from a height in considerable quantity from a garden watering-pot, is decisively impressive, and ordinarily safe, when employed in an early stage of this and other typhoid fevers; so aspersion or ablution of the body by means of a sponge, will be more eligible and safe in the advanced periods. The effects produced by both modes are grateful and refreshing to the patient, and they usually bring about an abatement of fever, followed by more or less of a diaphoresis, and this again by a refreshing sleep.

As to the modus operandi of cold and tepid affusions, whatever may be their immediate influence on the temperature and nervous system, the permanently good effects are to be attributed to the changes which they induce in the circulation.*

We have been gratified with an ingenious publication from the pen of Dr. Jackson, on the subject of cold affusion;† and although he agrees with Dr. Currie as to its utility and propriety in the milder forms of fever (whether infectious, and such as is usually called typhus, or endemic, such as arise from the action of common causes in a diffused form,) in the early stages of fever, still he differs from this gentleman on other important points.

Dr. Currie had employed the affusion of cold water in the mild and open forms of fever, without any previous preparation, and likewise in those which are violent, concentrated, and complicated, provided the temperature of the body, on being measured by a thermometer, was higher than the natural standard; but when lower than this, he advises us to abstain from its application. Dr. Jackson, in resorting to it, is guided by what he terms the evidences of a susceptible condition of the system, connected with the simple condition of the disease, being obvious; of the presence of which, he judges by the sensation communicated to his hand in touching the patient's body. Where he finds this deficient in any degree, or where it is unusually distributed on the surface, and unaccompanied by any primary mark of local inflammation, or congestion of any one of the internal organs being discernible, he endeavours to restore the susceptibility of impression, by conducting the patient into an apartment where the air is of a high temperature; by applying warm fomentations to the extremities; by purifying the skin by warm water, soap, and brushes, and then by immersing the whole body in a warm bath, or by affusing warm water generally over its surface. Where there is either a violent or rapid action, or a sluggish circulation, he does not consider these as proper conditions for the cold affusion; but to make them so, he recommends a preparatory process of general bleeding, and other evacuations: whereas, Dr. Currie considered vene-

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* See Illustrations of Typhus, &c. by J. Armstrong, M.D.

† See Exposition on the Practice of applying Cold in Fevers, by Dr. Jackson.

section unnecessary to a previous use of cold affusion, except in cases of idiopathic inflammation.

The affusion of cold water on the surface of the body, is considered by Dr. Jackson as a power which makes a strong and general impression on the system, and which arrests the disease, or changes its condition in virtue of that impression; but not by subtracting increased heat, as supposed by Dr. Currie. Indeed, the good effects of the remedy in question cannot, I think, be wholly owing to the mere subtraction of heat; for it has been used with great advantage in many cases of fever, where there has been no perceptible increase of temperature; and where, by affusion, ablution, or aspersion with cold water, the disease has been cut short abruptly, as well as in those where it had risen to a high point. I think we may safely infer that cold affusion, or the suddenly pouring cold water over the whole surface of the body, operates as a powerful stimulant, although its effects, probably, are of short duration, unless frequently repeated; they are produced by the suddenness of the application affecting the nervous energy, and by the shock rousing the dormant susceptibility, so as to induce a new action, as it were, of the nervous system, removing spasmodic contraction of the extreme vessels on the surface, carrying off a large portion of morbid heat by general evaporation, and the remainder by insensible perspiration; thence restoring the healthy action of the exhalants and capillaries.

Although medicines which might excite much sweating would be highly improper in this fever, still we may venture to give those possessed of a mild diaphoretic power.* To assist in taking off the febrile stricture on the skin, a use of cool drink should be allowed, the bed-clothes be light, and cool air be freely admitted. In tempering morbid heat, allaying irritation, obviating petechiæ, and promoting sleep, a plentiful supply of fresh cool air will be a powerful auxiliary to the other means we employ.

In the progress of the disease, it has been usual, when particular affections arise, such as either a difficulty of breathing, violent pains in the head, delirium, or stupor, to excite an inflammation

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* 2. ℞ Succi Limon. f. ℥ss.
Potassæ Subcarbonat. ℥j.
Aq. Cinnam. f. ℥j
Confect. Aromat. gr. x.
Syrup. Zingib. f. ℥ij.
ft. Haustus, 4tis horis sumendus.

Vel,

3. ℞ Misturæ Camphoræ, f. ℥x.
Liquor. Ammon. Acetat. f. ℥iij.
Spirit. Æther. Nitrici, f. ℥ss.
ft. Haustus, quartis horis capiendus.

* 2. Take Lemon Juice, half an ounce.
Subcarbonate of Potass, one scruple,
Cinnamon Water, one ounce.
Aromatic Confection, ten grains.
Syrup of Ginger, two drachms.
Mix them, and let the draught be taken every four hours.

Or,

3. Take Camphorated Mixture, ten drachms.
Solution of Acetate of Ammonia three drachms.
Spirit of Nitric Æther, thirty drops.
Mix them. This draught may be taken every four hours.

in the neighbourhood of the part affected by the application of a blister, and not unfrequently the poor patient has been tortured with half a dozen at a time in the advanced stage of the disorder. This practice is certainly very reprehensible. The application of even a single blister to the back and head, particularly in the advanced stage of this fever, with the view of relieving stupor and coma, is much disapproved of by many physicians; and Dr. Darwin mentions,* that he has seldom seen any beneficial effects derived from it, but, on the contrary, a prejudicial one.

In typhus, where stupor, coma, or delirium prevails, or there is great pain in the head, with restlessness, the pediluvium, together with the application of cold to the head, (having had it properly shaved) by means of large towels dipped in the coldest water, mixed with vinegar or rectified spirits, and renewed frequently until the patient is easier, the heat less, and a disposition to sleep has taken place, will be useful and advisable. In general, it will be necessary to repeat the operation at short intervals at first, and it will be advisable to do it with so much quickness and perseverance as to produce some degree of shivering. Cold applications to the head and temples will not only prove of infinite advantage, but highly grateful to the feelings of the patient. In mania and phrenitis, the application of cold in this way will also be highly beneficial.

If a purging arises, it is to be stopped by having recourse to astringents,† as advised below; but in the progress of the disease, if a gentle diarrhœa takes place, and seems likely to prove critical, it should by no means be checked.

Profuse sweats are to be obviated by the person being lightly covered with bed-clothes; by keeping his hands and arms uncovered; by admitting fresh air freely into his chamber, and by giving him whatever he drinks, cool, and properly acidulated with lemon or orange juice.

Much rambling and low delirium are apt to arise in typhus from a want of sleep, and to make it necessary to have recourse to opium in order to procure it. The most advisable way of using it in such cases, is to combine it with some gentle diaphoretic.‡—

* See his Zoonomia.

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† 4. ℞ Mistura Cretæ, f. ℥iv.
Tinct. Catechu, f. ℥ij.
—— Opii. ℥ xxx.
Aq. Cinnam. f. ℥ij.
ft. Mistura, cujus sumat Cochl. ij. magna sextis horis.

‡ 5. ℞ Liquor. Ammon. Acetat. f. ℥iij.
Aquæ Cinnam. f. ℥j.
Tinct. Opii, ℥xx.
Syrup. Zingib. ℥ij. M.
ft. Haustus.

Vel,

6. ℞ Mistur. Camphoræ, f. ℥j.

† 4. Take Chalk Mixture, four ounces.
Tincture of Catechu, two drachms.
—— Opium, forty-five drops.
Cinnamon Water, two ounces.
Mix them. Two table spoonsful may be taken every six hours.

‡ 5. Take Solution of the Acetate of Ammonia, three drachms.
Cinnamon Water, one ounce.
Tincture of Opium, thirty drops.
Syrup of Ginger, two drachms.
Mix them for a draught.

Or,

6. Take Camphorated Mixture, one ounce.

By giving it in this manner early in the evening, we shall in general experience the most beneficial effects from it.

Opiates are indeed more admissible in this species of fever than in any other; but an opiate will be particularly useful in that variety of typhus in which watchfulness and starting are prominent features.

During the stage of excitement, diffusible stimuli would be likely to prove detrimental; and the practice of giving wine in considerable quantities, indiscriminately throughout all the stages of genuine typhus, is therefore improper. So far from their being admissible in this stage of the fever, the lightest and coolest regimen is imperiously demanded: and even every animal substance, with perhaps an exception to milk, had best be prohibited. The patient's diet should consist of farinaceous preparations, occasionally substituting a little beef tea, or chicken broth. Meat of any kind should not be allowed for many days after the crisis or cessation of the fever.

When the fever is somewhat more advanced, and symptoms of debility begin to appear (for during the first days of typhus the debility is only apparent, not real, as the first stage is one of oppression,) a moderate use of wine becomes highly necessary, and may not only be given in the form of negus, somewhat sharpened with the juice of orange, but likewise be mixed with either sago, gruel, panado, or arrow-root, and thus be administered as food. Wonderful, indeed, are the effects produced by wine in typhus fever, when given in the proper stage, as we often see persons recover by a free use of it under unpromising circumstances.

A late physician* of great celebrity, recommends wine and opium in small quantities, repeated every three hours alternately; and this with a view of rousing the system from a state of torpor and debility.

In advising a use of wine, I must caution the practitioner not to run into excess, and over-stimulate the patient, as this might destroy him. Wine, although a very grateful and convenient stimulus, is very liable to be abused by being given in too great a quantity, and at too early a period of the disease. In ordinary cases, a very good effect may be obtained by half a bottle in a day, and this may be regarded as a moderate quantity for an adult; but in some cases a whole bottle may be necessary, and in some a little more; but it should always be given with an equal part of water. The best rule is to proportion the quantity of wine to the degree of debility present, the age of the patient, and the effect produced on him by it.

* Dr. Darwin.

Vini Antim. Tart. ℥ xv.	Wine of Tartarized Antimony, twenty-two drops.
Syrup. Papav. f. ʒiij. M. ft. Haustus.	Syrup of Poppies, three drachms. Mix them for a draught.

Spirits have sometimes been recommended as a substitute for wine, in cases where the latter cannot be afforded or procured; but they do not answer so well. When given they should be administered much diluted, as in the form of punch. Cider has been considered by some physicians, particularly the late Dr. Gregory of Edinburgh, as the best substitute for wine. Where wine disagrees with the patient, punch or cider may be employed, together with aromatics.

Throughout the whole course of the disease, he should be kept perfectly quiet, and none but those whose business it is to attend on him ought to go near him, except in those cases where the symptoms are very mild, and where there is little or no affection of the head. In such cases the presence of a friend may sooth the mind and help to dispel gloomy ideas. A plentiful supply of cool and fresh air, throughout the whole course of the disease, is a point of the highest importance, and therefore the patient's chamber should be kept freely ventilated, and his bed be lightly covered with clothes: he should be solaced and comforted with the hope of a speedy recovery, and his thoughts be diverted from that anxiety and dread of danger which invariably attend the complaint.

Many practitioners are in the habit of giving the cinchona bark in this fever, without waiting for even the most imperfect crisis; some having in view its supposed febrifuge qualities, and others, its tonic powers. In mild cases, where there prevails hardly any stupor, or other affection of the head, and where the remissions are regular, it may perhaps be of service; but in a state of convalescence it will prove highly beneficial, and may therefore be given either in substance, decoction, or infusion, as may be found to sit best on the stomach, combined with a few drops of diluted sulphuric or muriatic acid, or with subcarbonate of potass and lemon juice. Where the skin and tongue are dry, where the remissions are irregular, and where the fever abates for a day or two, and then returns with violence, I have always found it prove prejudicial. In all such cases, an infusion of cascarilla, or orange peel, will be a better vehicle to administer the acids in, and I am of opinion that the muriatic is entitled to the preference.

Miliary eruptions sometimes appear as the crisis to this fever; they ought, therefore, by no means to be checked by any kind of evacuation, nor should the patient, on the contrary, be kept too warm in order to force them out.

Where there prevails any unusual coldness in the lower extremities, the application of a couple of small blisters to the inside of the legs, or of stimulating cataplasms to the soles of the feet, will be proper.

In the last stage of typhus, when neither cinchona, wine, or brandy, cold bathing, or even occasional doses of Cayenne pepper, had the effect of rousing the powers of life, or of lessening the thick crust which covered the tongue, it appears, by Dr. Ferriar's

report, that the most singular advantages were obtained by giving the arsenical solution. He found that it did not operate as a general stimulant, but merely as an active tonic, and therefore, that neither the concomitancy of cough, or dyspnœa, prohibits its use in typhus. As soon as the febrile paroxysms are stopped, he thinks it will be best to suspend the use of the arsenical solution, and to support the patient with bark and different cordials. A very severe case of typhus lately fell under my care, the patient having suffered two relapses of the fever, and her life despaired of, when I was induced to make trial of the mineral solution. Its effects exceeded my expectations, for the woman's life was apparently preserved by it. It was administered in an infusion of cascarilla, with an equal quantity of camphorated mixture.

In bad cases, where startings of the tendons and hiccups arise, besides making use of the means advised, it may be necessary to have recourse to antispasmodics*, such as musk, ammonia, æther, camphor, and opium.

If this fever is likely, or threatens in its progress, to degenerate into typhus gravior, we should administer the mineral acids, but more particularly the muriatic, in such doses as the patient is capable of bearing. To prevent its affecting the stomach and bowels, a few drops of tinctura opii may be added to each dose. An infusion of cascarilla, calumba, or orange peel, may be employed as the vehicle, or we may give the acid in a little wine and water.—See Typhus Gravior.

In an advanced stage of this disease, it sometimes happens that, in addition to a profuse secretion of viscid saliva, little white ulcers, or aphthæ, appear in the inside of the mouth and fauces. In such cases, a gargle composed of borax, honey, and an infusion of roses, should be used three or four times a day.

When the fever goes off, and the patient has somewhat regained

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* 7. ℞ Mosch. gr. x.
Aq. Cinnam. f. ℥ jss.

Æther. Sulphuric. ℥ xv.

Tinct. Opii, ℥ x. M.
ft. Haustus, ter in die sumendus.

Vel,

8. ℞ Ammoniæ Subc. gr. v.

Camphor gr. iv.
Opii, gr. ss.
Confect. Aromat. q. s. M.
ft. Bolus, 6ta quaq. hora sumendus.

Vel,

9. ℞ Misturæ Moschi,
——— Camphoræ, āā f. ℥iij.

Æther. Sulphuric. f. ℥ij. M.
ft. Mistura, de qua capiat Cochl. ij. magna tertia vel quarta quaque hora.

* 7. Take Musk, ten grains.
Cinnamon Water, one ounce and a half.
Sulphuric Æther, twenty-five drops.
Tincture of Opium, sixteen drops.
Mix them for a draught, to be taken three times a day.

Or,

8. Take Subcarbonate of Ammonia, five grains.
Camphor, four grains.
Opium, half a grain.
Aromatic Confection, a sufficiency to form the whole into a bolus, to be taken every six hours.

Or,

9. Take Musk Mixture,
Camphor Mixture, each three ounces.
Sulphuric Æther, two drachms.
Mix them. The dose may be two table spoonsful every three or four hours.

his strength, he may take daily exercise on horseback, or in a carriage; and in order to remove the irritability and weakness which are left behind, he should enter on a course of the cinchona bark and other tonics. After a little time, the cold bath will be a proper remedy, if the season of the year is such as to admit of it. If the appetite does not readily return on the cessation of the fever, stomachic bitters* will be proper.—See Dyspepsia.

A degree of mania, or temporary alienation of the mind, sometimes arises at the close of typhus. All that can be done in such a case is to support the patient with a generous nutritive diet; to keep him as quiet and tranquil as possible; and to put him under a course of tonics, carefully avoiding all evacuations.

A specific poison, capable of causing a similar disease in others, is generated in the system of a person under this fever. The poison, as soon as the disease is fairly begun, continues unremittingly to exhale from every pore, until convalescence is nearly completed. Not only the surface of the skin, but also the inner surface of the lungs, mouth, intestines, and bladder, continue to pour out the contagious vapour; consequently the very secretions and excretions are highly impregnated with it. In truth, the patient is surrounded by an atmosphere of his own, very deleterious to all persons susceptible of the disease, who may be exposed to it.

As a matter of precaution, therefore, whenever it happens that a person infected with typhus fever, or indeed any other contagious disease of a malignant nature, is necessarily confined in a house occupied by a numerous family, he should be removed to the upper story, as the current of heated air is always upwards, and the atmosphere loaded with the contagious steams emanating from the patient's body, will (if he be in a lower apartment) diffuse themselves over the whole house, whereas, if he be placed above, they will have a ready and immediate vent. As strict a non-intercourse as possible with the sick should be enforced; and

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* 10. ℞ Infus. Gentian. Comp. f. ℥iv.
Tinct. Card. C.
—— Calumb. āā f. ℥ss. M.
Capiat Cochl. ij. ampla mane, hora meridiana, et vespere.
Adde pro re nata
Acid. Sulphur. Dilut. ♏ xiv.
Vel,
11. ℞ Infus. Cort. Cascaril. f. ℥x.
Tinct. Gentian. C.
—— Cinnam. C. āā f. ℥j.
Acid. Sulph. Dilut. ♏ xiij.
ft. Haustus, ter in die sumendus.

* 10. Take Compound Infusion of Gentian, four ounces.
—— Tincture of Cardamoms,
Tincture of Calumba, each half an ounce.
Mix them, and give two table spoonsful morning, noon, and evening, adding occasionally twenty-two drops of the Diluted Sulphuric Acid.
Or,
11. Take Infusion of Cascarilla, ten drachms.
Compound Tincture of Gentian,
—— Cinnamon, each one drachm.
Diluted Sulphuric Acid, twenty drops.
Make them into a draught, which is to be taken three times a day.

those whose duty or kindness leads them to visit the patient should be very careful not to inhale his breath, or expose themselves to that steam of perspirable matter which emanates from his body when the bed-clothes are turned down, for the purpose of rendering him any offices of assistance. While engaged in such duties, they should retain their breath for a time; and if under the unavoidable necessity of inhaling the tainted atmosphere, they should as soon afterwards as possible, blow from the nose, spit, or wash the mouth, with a view of detaching any infectious particles that may have adhered to these passages. All the discharges of the patient should be thrown away at some distance as soon as they are rendered, and the vessel washed with boiling water. But the most important precaution of all is to maintain a perpetual circulation of air in the patient's chamber, throughout the whole course of the disease; and for this purpose, a part of the window should be left open both at top and bottom, and the opposite window, where there is one, or else the door of the room, should also be a little opened. For the better success of ventilation, the bed curtains should never be drawn close round the patient; but merely one of them let down to screen him from the irritation of light. When open windows cannot be had recourse to on account of high winds, or other inclemency of the weather, a small fire must be kindled in the grate, so as to cause a current and frequent renewal of the air in the chamber, without considerably raising the temperature. Another essential precaution consists in frequently changing the body and bed-linen of the patient, which, as soon as removed and carried away, may be put into a tub and covered over with water, into which a handful of lime or potash may be thrown, for the purpose of detaching the animal matters with which they may be impregnated. In few words, unremitting regard to ventilation, and the strictest attention to cleanliness in all its parts, constitute the whole secret of evading contagion. Fumigations with nitric, or muriatic acid, in a state of vapour, as recommended under the succeeding head of Typhus Gravior, may, however, be employed as auxiliaries.

As circumstances may occur for rendering it necessary to remove patients labouring under typhus fever to some distance, it is important to know that this may be effected without subjecting them to any risk. Indeed, considerable benefit has been derived on such occasions by conveying the sick in open carriages, or spring waggons*, for several miles freely exposed to the air.

TYPHUS GRAVIOR, OR MALIGNANT AND PUTRID FEVER.

This fever takes its name from the malignancy of its nature, and the symptoms of putrefaction which are to be observed towards

* See outlines of the History and cure of Fever, by J. Jackson, M.D.—Remarks on the Constitution of the Medical Department of the Army, by the same.

its close. It is to be readily distinguished from the inflammatory by the smallness of the pulse, the sudden and great debility which ensues on its first attack, the brown or black tongue, the dark and fetid sordes about the teeth, the livid flush of the countenance, and the acrid and more intense heat of the skin: and in its more advanced stage, by the petechiæ, or purple spots, which come out on various parts of the body, and the fetid stools which are discharged; and it may be distinguished from typhus mitior by the great violence of all the symptoms on its first coming on.

The most general cause which gives rise to this disease is contagion, applied either immediately from the body of a person labouring under it, or conveyed in clothes or merchandise, &c.; but possibly it may be occasioned by the effluvia arising either from animal or vegetable substances in a decayed or putrid state. A want of proper cleanliness, accumulated human exhalations, and contaminated air, may also, I think, prove causes of this fever; hence it prevails in the houses of the poor, in hospitals, gaols, camps, and on board of ships, especially when such places are much crowded, and the strictest attention is not paid to a free ventilation and due cleanliness.

Those of lax fibres, and who have been weakened by any previous debilitating cause, such as poor diet, long fasting, hard labour, continued want of sleep, too free a use of enervating liquors, and an indulgence in sensuality and other debaucheries, are most liable to attacks of it. We are, therefore, to look on these as so many causes which induce that state of predisposition readily to be influenced by the operation of contagious miasms.

It has been denied by some physicians of the present time, that either the plague, yellow fever, or typhus, are contagious diseases; and it is true, indeed, that we cannot, in every case, ascertain that the complaint originated from a communication with diseased persons; nor will the actual communication always produce fever; many predisposing causes are requisite: and, moreover, the human constitution is evidently less susceptible of diseases at one time than at another. Whoever has paid proper attention to the symptoms of typhus, may, however, be induced readily to conclude, that the surrounding atmosphere, to an extent more or less great, particularly in small, close, unventilated rooms, may become sufficiently impregnated with the effluvia continually exhaling from the diseased body, to infect other persons with a similar disease. In a pure air, in large and well ventilated apartments, where the dress of the patient and bed-clothes are frequently changed, all excrementitious discharges promptly removed, and an attention paid to cleanliness in general, neither typhus, under any form, plague, or dysentery, are usually contagious, or under such circumstances are rarely communicated from one person to another.

Some writers have supposed infants to be as liable to fevers as adults, and from the same causes: but I cannot agree with them:

for I have observed that infants do not readily take fevers, although exposed for a long time to that contagion which has appeared to affect adults round them: and every physician who attends lying-in hospitals, must not only have known many infants suckled without injury, through the whole stage of bad fevers from which their mothers have recovered; but also, in other instances, sucking greedily within an hour or two of their mothers' death.

On the first coming on of typhus gravior, the person is seized with languor; dejection of spirits; amazing depression of muscular strength; and apparently great debility; universal weariness and soreness; pains in the head, back, and extremities, and rigors; the eyes appear full, heavy, yellowish, and often a little inflamed; the temporal arteries throb violently; the tongue is dry and parched; respiration is commonly laborious, and interrupted with deep sighing; the breath is hot and offensive; the urine is crude and pale; the body is costive; and the pulse is usually quick, small, and hard, and now and then fluttering and unequal. Sometimes a great heat, load, and pain, are felt at the pit of the stomach, and a vomiting of bilious matter ensues.

As the disease advances, the pulse increases in frequency (beating often from 100 to 130 in a minute): there is apparently vast debility; great heat and dryness of the skin; oppression at the breast, with anxiety, sighing, and moaning; the thirst is greatly increased; the tongue, mouth, lips, and teeth, are covered over with a brown or black tenacious fur; the speech is inarticulate, and scarcely intelligible; the patient mutters much, and delirium arises. The fever continuing to increase still more in violence, symptoms of putrefaction show themselves; the breath becomes highly offensive; the urine deposits a black and fetid sediment; the stools are dark, disagreeable, and pass off insensibly; hæmorrhages issue from the gums, nostrils, mouth, and other parts of the body; livid spots, or petechiæ, appear on its surface; the pulse intermits and sinks; the extremities grow cold; hiccups ensue; and death at last closes the tragic scene.

When this fever does not terminate fatally, it generally begins, in cold climates, to diminish about the commencement of the third week, and goes off gradually towards the end of the fourth, without any very evident crisis; but in warm climates it seldom continues above a week or ten days, if so long. Our opinion, as to the event, is to be formed by the degree of violence in the symptoms, particularly after the appearance of petechiæ, although, in some instances, recoveries have been effected under the most unpromising appearances. An abatement of febrile heat and thirst, the tongue becoming moist and clean, a gentle moisture diffused equally over the whole surface of the body, loose stools, turbid urine, the pulse being stronger, but less frequent, a free secretion of saliva, tumour and suppuration of the parotid, axillary,

or inguinal glands, a scabby eruption about the mouth, and the delirium and stupor abating, or going off, may be regarded in a favourable light. On the contrary, great muscular debility, very laborious respiration, difficulty of deglutition, stupidity, and listlessness of the eyes, perpetual writhing of the body, petechiæ of a livid colour, with dark, offensive, and involuntary discharges by urine and stool, fetid and cadaverous sweats, hæmorrhages, subsultus tendinum, and hiccups, denote the almost certain dissolution of the patient.

In some countries where the yellow fever occasionally makes its appearance, we have just grounds for presuming that typhus gravior, attended with bilious symptoms, has been mistaken for the former at times; and, indeed, from some papers lately transmitted to me from Dr. Townsend of New-York, and for which I beg leave to offer him my best thanks, it appears that this was the case with some practitioners who are members of the Incorporated Medical Society of that place, respecting a fever of the malignant typhoid kind, denominated by Dr. Richard Pennel in his Inaugural Thesis, the Bilious Typhus; which prevailed in the summer and autumn of 1820, in some of the very confined districts of the city, and where there was a dense population, with a total neglect of due cleanliness and proper ventilation; but on due consideration, the two diseases in question are essentially and radically different. In the yellow fever, there is invariably a vomiting of a flaky, dark, or coffee-ground like matter, whereas in typhus gravior, we meet with no such accompanying symptom. Moreover, the treatment in the two diseases must be very different; for an emetic in the early stage of typhus gravior, is generally administered, and with great benefit to the patient; but in the yellow fever, this remedy would be likely to hurry the unhappy sufferer out of existence, there being naturally great irritation at the stomach, and very severe retchings.

The appearances usually perceived on dissection in typhus gravior are, inflammations of the brain and viscera, but more particularly of the stomach and intestines, which are now and then found in a gangrenous state. In the muscular fibres there seems likewise a strong tendency to gangrene.

On the very first taking place of any of the symptoms of this fever, we should immediately attend to them, and endeavour to prevent any bad consequences from ensuing, as they will never go off of themselves, but will continue to increase, until a disease of a most dangerous nature takes place. This being the case, we should resort to proper remedies at the first onset. The most proper remedy will be an emetic of about fifteen grains of ipecacuanha, with one grain of tartarized antimony, which may be worked off with an infusion of the flores anthemides. An emetic at the commencement of the disease, is a very important article, and the clearing of the stomach is not the only good effect to be expected from this remedy. After its operation is over, the

bowels may be opened with some gentle purgative*. Possibly a few grains of hydrargyri submurias combined with jalap, or the extract of colocynth, may be preferable to any other. Should the desired effect not be produced by these medicines, an aperient clyster may be administered†. Throughout the course of the disease, the patient, in no case, should be more than two days without a stool, for a great deal of fæces are produced in fever although little food is taken, and costiveness is apt to induce an increase of heat, and affections of the head, as delirium, &c.

These steps being pursued, and the nature of the disease clearly ascertained, I would advise the ablution of the patient with cold water, or rather a general affusion, provided the heat of the body is steadily above the temperature of health. The good effects of this mode of practice I have often experienced.

The late Dr. Currie, of Liverpool, reports, that this fever having made its appearance in a regiment quartered in that town, he had the men drawn up and examined, seventeen of whom were found with symptoms of it upon them: these he subjected to the cold affusion once, or sometimes twice a day. In fifteen of this number the contagion was extinguished, and in the remaining two, the fever went through its course. The healthy part of the regiment bathed in the sea daily, and by these means he effectually destroyed the contagion. He further relates, that of thirty-two who went through the disease, by its being too confirmed to be removed at the time of his first seeing them, only two died; and with these the cold affusion was not had recourse to.

This gentleman's report, with the authorities of other practitioners of eminence, clearly prove the application of cold water by affusion on the first attack of the complaint to be, under certain restrictions, an efficacious remedy for stopping its progress, as likewise that of other low contagious fevers.

Dr. Currie found that the most advantageous time for using the cold affusion is when the exacerbation is at its height, or immediately after it is begun, which is generally from six to nine in the evening; but he observes it may be used with safety at any time

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* 1. ℞ Mann. Optim. ℥ij.
Potassæ Tartrat. ℥iij.
Infus. Sennæ, Comp. f. ℥iss. M.
ft. Solutio pro dos.
Vel,
2. ℞ Hydrargyr. Submur. gr. v.
Extract. Colocynth. C. gr. x.
Fiant pilulæ iij. pro dos.

† 3. ℞ Decoct. Malvæ Compos. f. ℥xij.
Sodæ Sulphat. ℥ss.
Ol. Olivæ, ft. ℥ j. M. f. enema.

* 1. Take Manna, two drachms.
Tartrate of Potass, three drachms.
Compound infusion of Senna, one ounce and a half.
Mix them for a dose.
Or
2. Take Submuriate of Mercury, five grains.
Compound Extract of Colocynth, ten grains.
Make the mass into three pills, to be taken at once.

† 3. Take Compound Decoction of Marsh-mallows, twelve ounces.
Sulphate of Soda, half an ounce.
Olive Oil, one ounce.
Mix them for a clyster.

of the day, when there is no great sense of chilliness present; when the heat of the surface is steadily above what is natural; and when there is no general or profuse perspiration.

The same remedy has likewise been successfully employed by him, myself, and many others, in the more advanced stage of the fever, so as seldom to fail of procuring a safe termination. He relates the case of a soldier who was in the ninth day of the disease when he first saw him: his pulse was 100, and feeble; his heat was 104; his thirst very great; his tongue foul and black; his mind much confused, and at times he was delirious; and petechiæ were dispersed over his whole body. The mode of treatment was as follows: his strength was directed to be supported by administering a bottle of wine a day, with an equal quantity of gruel; every night he took an opiate draught, and his body was kept open by laxative clysters, and when these failed, by a few grains of calomel. A bucket-full of salt water was directed to be thrown over him immediately, which was to be repeated according to circumstances.

The effect was, that in a few minutes after the affusion, the heat lessened to 98; the pulse moderated to 96; and his mind became more calm and collected. Two hours afterwards he had relapsed nearly into his former state, but the night was passed with greater tranquillity. The whole of this practice was continued with nearly the same result, until the twelfth day of the disease, the affusion having been performed in the evening, and occasionally at noon. The fever continued its usual period; but on the twelfth day, the heat having sunk to its natural standard, the cold affusion was thenceforth omitted, and instead of it, the body was sponged all over once or twice a day with vinegar.

In those cases where the fever had been of eleven, twelve, or thirteen days' standing, and the heat of the body was inconsiderable, he thought it prudent to make the degree of cold very moderate, and in some instances he substituted tepid ablution, or sponged the body over with vinegar by itself or diluted with water.

Some communications to Dr. Currie from Mr. Marshall, surgeon of the Cheshire regiment, bear further testimony to the good effects of this remedy in typhus fever. In sixty cases out of sixty-four, in which it was employed at an early period, the disease was arrested by having recourse to it three or four times; and in the other four which were advanced in their progress, although the disease was not stopped from going through its natural course, still all the patients recovered. Mr. Marshall mentions, that from the time he began the cold affusion, he used little or no wine, no opium, nor indeed scarcely any other remedy in any one case in which the cold affusion was employed; which report is of itself sufficient to establish its decided superiority over every other mode of treatment.

It is, however, in the early stages of low contagious fevers that we can employ it with most advantage. It has, indeed, been used

by many practitioners, in some instances, so late as the twelfth, or even the fourteenth day, with safety and success; but it can only be employed at this advanced period, in the instances in which the heat keeps up steadily above the natural standard, and the respiration continues free. In such cases it has been observed to appease agitation and restlessness, dissipate delirium, and, as it were, snatch the patient from impending dissolution. When the remedy is to be had recourse to, every arrangement should be made for the affusion before the patient is moved at all; and fatigue as well as disquiet should be avoided as much as possible. In those cases where the delicacy of the system, or the apprehensions of the patient, or of the by-standers, may prevent cold affusion from being employed, we may substitute tepid affusion for the more powerful remedy, or we may recommend either ablution or aspersion.

A memorable instance of the good effects of cold affusion came under my immediate knowledge some years ago, whilst I practised in the West Indies. A professional gentleman of my acquaintance, residing in the island of Nevis, was attacked with this fever, and it proceeded with such violence, that in a few days petechiæ appeared on different parts of his body, and a hæmorrhage of blood issued from his nostrils, mouth, and other places. Under these unfavourable circumstances he was freely exposed to the open air, and one or two buckets of cold water were thrown over him; he was then wiped perfectly dry, and replaced in his bed; which plan of proceeding was repeated twice and sometimes thrice a day. By means of this application, the administration of an opiate at night, and a liberal allowance of wine, his life was preserved, to the great but pleasing astonishment of all his friends.

I have been much in the habit of recommending cold affusion, or ablution, in most cases of typhus fever, and with very beneficial effects. The same practice has been adopted in the London House of Recovery, and apparently with the most decided success. Obvious, however, as are the advantages to be derived from the remedy in question, still there are many practitioners who look on it as an innovation, and are therefore averse to it.

In the early stage of typhus, the superior efficacy of affusion over ablution, is unquestionable; its operation extends beyond the mere abstraction of heat from the surface: it acts powerfully on the nervous system. Besides its effectually removing the uneasy sensation of heat in the beginning of febrile diseases, and thus indirectly recruiting the animal powers, it induces sleep. We well know that when any disagreeable sensation is removed, sleep soon follows, and it happens so in this instance. After the fourth or fifth day of fever, the influence of both affusion and ablution is greatly diminished, and not sufficient to interrupt the morbid actions; at a still more advanced stage the heat is removed nearly in the same degree by washing the surface of the body with a wetted sponge, or cloths dipped in water, as by pouring cold

water on the naked body ; and the patient is relieved nearly the same by one mode of treatment as by the other. Thus much for the comparative merits of affusion and ablution.

In the advanced stages of typhus gravior, as well as of typhus mitior, where either the affusion of water of a low temperature, the immersion of the patient, or even the sprinkling his body with cold water, might in the least endanger our arresting the movements of life, we should always take the precaution of giving a glass of warm wine, or some other powerful cordial, immediately after employing the remedy.

It is no uncommon occurrence for the symptoms to run very high at the commencement of this fever, so as to give it rather an inflammatory appearance; which has induced practitioners, at times, to draw off blood, by opening a vein : but except in those cases where there is great intellectual derangement, considerable determination of blood to the head, or symptoms of venous congestion therein, venesection will not be requisite. In all such cases, no doubt, the drawing off blood (proportioning the quantity to existing circumstances,) at an early stage of the disease, will be proper and serviceable; and should the cerebral congestion not be relieved, or the fever be of some days' duration, we may then apply six or eight leeches to the temples.

The prostration of strength, which ensues in the early stage of typhus, has by some physicians been considered as chiefly occasioned by an undue quantity of blood being determined to the vessels of the brain ; and under this idea, when called to a person labouring under typhus fever, however great the depression of strength may appear, if the pain in the head be violent, they either order the temporal artery to be opened, where it can be done conveniently, or direct eight or ten leeches to be applied to the forehead and temples, and be afterwards allowed to bleed freely.

Whatever is given to the patient for drink ought to be cold, and gently acidulated with the juice of oranges or lemons. The mineral acids likewise are, beyond all doubt, better remedies in this and other malignant diseases, than we have been accustomed to regard them ; and from having employed them, but more particularly the muriatic, for several years with very great success in typhus gravior, I can vouch for their efficacy. My usual plan of proceeding is as follows :—Having relieved the stomach by a gentle emetic where nausea prevails, cleared the bowels of their feculent contents by a proper dose of hydrargyri submurias joined with a few grains of the extract of colocynth. c., and subjected the patient to cold affusion, when the circumstances already noticed have admitted of it, I prescribe for adults ten or twelve drops of the muriatic acid, guarded with five drops of tinctura opii ; and as a vehicle I employ about an ounce and a half of an infusion of cascarilla, calumba, or orange peel. This draught I direct to be repeated every four hours, gradually increasing the quantity of the acid in each to eighteen or twenty drops, or more. When the

fever begins to decline, or to show remissions, I substitute a decoction of cinchona instead of the infusion of calumba, cascarilla, or orange peel.

The effects of the muriatic acid in all febrile diseases of a malignant nature are truly great; and from using it in all such cases, my practice has been attended with the most decided success. As a confirmation of its utility, it is proper to mention, that a considerable pension has been granted by the King of Prussia to Dr. Reich, professor of medicine at the university of Erling, in Franconia, for making known a remedy, by the use of which all danger was removed in acute diseases of a malignant nature; and that, on a disclosure of the secret, it proved to be the acids containing oxygen, but particularly the muriatic. In cases of extreme danger, we are told by him,* that one or two drachms of the acid may be given at once. The discovery, however, connot be claimed by the Prussian professor, as it is well known that the late Sir William Fordyce highly recommended the muriatic acid to be given internally in diseases of a putrid or malignant nature, and likewise to be applied in the form of gargle to the sloughs of the throat which often accompany such fevers.

In typhus gravior, as well as in scarlatina, the internal use of the oxygenated muriatic acid is a powerful and highly efficacious medicine.

A material circumstance to be attended to, not only at the commencement of this fever, but through its whole course, is to cover the patient lightly with bedclothes, and to keep his apartment cool and properly ventilated, by allowing a regular and free admission of fresh air into it; and in order to render it pleasant both to himself and his attendants, it ought to be sprinkled several times a day with warm vinegar and camphorated spirit. Fumigations in the manner herein after noticed will also be advisable. Cleanliness, in the strictest sense of the word, is to be most carefully attended to; and, therefore, not only the bed and body linen should be changed frequently, but whenever a motion takes place, it ought immediately to be removed.

The viscid phlegm, which collects about the tongue and teeth, should be coagulated by some austere acid, and then it may be scraped off by a knife, or be wiped away with a bit of flannel dipped in vinegar, or salt and water.

Although there is not usually any regular crisis to this fever, still nature sometimes endeavours to throw it off by a gentle moisture diffused equally over the whole surface of the body; to promote this, we may advise some gentle diaphoretic ;* but we

* See a translation of his German work, by the late Dr. Parry of Bath.

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* 4. ℞ Camphoræ, gr. iv.
Pulv. Ipecac. gr. iij.
Confect. Aromat. gr. x. M.
ft. Bolus, 6tis horis sumendus.

* 4. Take Camphor, four grains.
Powder of Ipecacuanha, three grains.
Aromatic Confection, ten grains.
Make them into a bolus, which may be taken every six hours.

are carefully to guard against exciting profuse sweats, which would certainly prove prejudicial.

In the first stage of the disease, where there are local determinations, and there arises any violent affection of the head, or difficulty of breathing, it has been usual to apply a blister to the neighbourhood of the part affected. Where stupor prevails, with little or no delirium, we need not employ it: but where the delirium, in the first stage of the disease, is violent, and accompanied with great wildness of the eyes, so as to threaten a phrenitis, we may recommend it, and probably it will afford relief. In an advanced stage, or after symptoms of putrescency have become obvious, the application of a blister would be highly improper, as mortification is apt to attack the blistered parts. Rubefacients are preferable, and may be applied to a great extent of surface at short intervals.

In typhus gravior, as well as the milder form of the disease, the application of cold to the head might probably be substituted for a blister with advantage in those cases where there prevails either coma, or delirium, or there is a great pain in the head, with much restlessness. Having had the head properly shaved, a large towel, dipped in the coldest water, may be applied all over it, renewing the process frequently until the patient is easier, the heat less, and a disposition to tranquil sleep has taken place. At first it will be necessary to repeat the operation at short intervals, and it will be desirable to do it with such quickness and perseverance as to produce some degree of shivering. In severe cases, we may substitute the application of powdered ice, enclosed in a bladder, to the shaven scalp.

When hæmorrhages ensue, and petechiæ have appeared on the body, we should have recourse to the most powerful antiseptics, such as vegetable and mineral acids, carbonic acid in every form, liquors in a state of fermentation, oxygen gas, oxgenated muriate of potass,* aërated waters, wine, cold affusion, and cinchona.†

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* 5. ℞ Muriat. Potassæ Oxygenat. ℈i.—℥ss.
Tinct. Cort. Aurant. f. ℥i.
Aq. Cinnam. f. ℥jss.
Syrup. Simpl. f. ℥j. M.
ft. Haustus, 3tia hora capiendus.

† 6. ℞ Decoct. Cinchonæ, f. ℥vij.
Tinct. Serpent. f.
——Cinnam. f. āā ℥ss. M.
ft. Mistura, cujus sumat uncias duas tertiis horis cum Acid. Nitrici Dilut. ♏vi.—xvi.

* 5. Take Oxygenated Muriate of Potass, from one scruple to half a drachm.
Tincture of Orange Peel, one drachm.
Cinnamon Water, one ounce and a half.
Common Syrup, one drachm.
Mix them. This draught may be taken every three hours.

† 6. Take Decoction of Bark, seven ounces.
Tincture of Snake Root,
——— Cinnamon, each half an ounce.
Shake them together, and of the mixture let the patient take about four table-spoonsful every three hours, with from ten to twenty-four drops of Diluted Nitric Acid.

We may also administer clysters of diluted vinegar,* or crystallized acid of lemons, in moderate quantities, that they may remain in the rectum, and thereby be likely to be absorbed.

The exhibition of fixed air in the form of yest has been recommended in this fever. With respect to the use of this remedy internally in typhus, some practitioners have looked upon it rather as a doubtful remedy, although they readily subscribe to its good effects as an external application in fetid putrid ulcers. I have made trial of it very frequently, and, as I conceive, with some advantage; nor did it, in a single instance, excite any commotion or disorder, either in the stomach or bowels of my patients, as some have reported to have happened with them on making use of it. As the good effects of yest seem to depend on the fixed air which it contains, it is probable that we might substitute water impregnated with the gas, to great advantage, as we should thereby avoid the disagreeable consequences attributed to it. The mode in which I administered yest was by adding one or two table-spoonsful of it to a quart of an infusion of malt or mild porter, of which the patient took a wine-glassful very frequently.

Whatever may be the mode of action of yest in typhus, the fact appears to be indisputable, that fixed air takes off that extreme debility of the stomach so conspicuously marked in disorders of this nature; and in proportion as that subsides, the pulse rises, becomes slower and fuller, the burning heat on the skin disappears, and a truce is gained for the reception of nutritive supplies.

In the first stage of typhus, when there is a high degree of excitement, wine would be improper; but after some days' continuance, and when there is no cerebral or other visceral conges-

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Vel,

7. ℞ Pulv. Cinchon. ℥ss.—℥j.
Tinct. ejusdem, f. ℥ij.
Aq. Cinnam. f. ℥jss.
Acid. Muriat. ♏viij.—xij. M.

Pro haustu, secunda vel tertia quaque hora sumendo.

Vel,

8. ℞ Decoct. Cinchona f. ℥ss.
Tinct. ejusdem, f. ℥ij.
Acid. Muriat. Oxygenat. ♏x. M.

ft. Haustus, 3tiis horis capiendus.

* 9. ℞ Decoct. Malvæ Compos. f. ℥vj.
Aceti Communis, f. ℥ijss. M.

ft. Enema.

Or,

7. Take Powder of Peruvian Bark, from half a drachm to one drachm.
Tincture of the same, two drachms.
Cinnamon Water, one ounce and a half.
Muriatic Acid, from twelve to eighteen drops.

Mix them for a draught, to be taken every second or third hour.

Or,

8. Take Decoction of Peruvian bark, one ounce and a half.
Tincture of the same, two drachms.
Oxygenated Muriatic Acid, fifteen drops.

Mix them, and give this draught every three hours.

* 9. Take Compound Decoction of Marshmallows, six ounces.
Common Vinegar, two ounces and a half.

Mix them for a clyster.

tion, a moderate use of it will be advisable. At the commencement of typhus, where only one or two organs are involved in the typhoid state (as, for instance, when the tongue is furred, or the evacuations from the bowels are very dark, while at the same time the body continues of a healthy colour, and the other secretions are of a natural appearance,) it would be highly injurious to prescribe wine in considerable doses: but in the more advanced stages, when the whole body is verging towards the putrid state; when the skin is of a dark colour, and covered with petechiæ; when the mouth and fauces are parched, and the tongue and gums encrusted with a dark fur, we may resort to this remedy with greater freedom. It may then be mixed in panado, gruel, or whatever else of the like kind the patient takes for food, or it may be given to him properly diluted with water to drink.

For the healing of ulcers in the mouth, we may employ a solution of alum in water (an ounce of the former to a pint of the latter,) as a gargle, which will quickly take away the stench that arises from them; or we may substitute that which has been recommended in typhus mitior.

In the advanced stage of typhus gravior it is of the utmost consequence to procure rest, and therefore, where there is no great delirium, we may give an opiate towards bedtime. Combining it with some diaphoretic* will prevent any deleterious effects from it, and therefore it will be best to give it in this way.

A slight purging, attended with a gentle moisture on the skin, not unfrequently arises towards the close of this fever, and now and then assists in carrying it off; but where it does not seem to produce a critical effect, it ought to be stopped as quickly as possible by astringents.†

When we succeed in removing the symptoms entirely by the means which have been pointed out, or in procuring a cessation of the fever, we are to endeavour to prevent its return by a free use of cinchona bark, the cortex cuspariæ, infusions of gentian and orange-peel, and other stomachic tonics; and in order to recruit the strength, the patient should be directed to use a nourishing

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* ℞ Liquor. Ammon. Acet. f. ʒiij.
Aquæ Cinnam. f. ʒj.
Tinct. Opii, ℥xxv.
Syrup. Simpl. f. ʒij. M.
ft. Haustus.

* 10. Take Solution of Acetate of Ammonia, three drachms.
Cinnamon Water one ounce.
Tincture of Opium, forty drops.
Syrup, two drachms.
Mix them for a draught.

† 11. ℞ Confect. Aromat. ʒss.
Aq. Cinnam. f.
—— Pimentæ, ãã f ʒjss.
—— Fontan. f. ʒij.
Tinct. Kino, f. ʒij.
—— Opii, ℥xxx. M.
ft. Mistura, cujus sumat Cochl. ij. magna Ætis horis.

† 11. Take Aromatic Confection, half a drachm.
Cinnamon and Pimento Water of each one ounce and a half.
Pure Water, two ounces.
Tincture of Kino, two drachms.
———— Opium, forty-five drops.
Of this mixture, take two large spoonsful every four hours.

diet, with wine in moderation; and he should take such gentle exercise as his state of convalescence will admit.

Having pointed out the mode of treatment to be adopted when the disease actually takes place, it seems proper likewise to mention the precautions it may be necessary to pursue, in order to prevent its contagion from being communicated to others.

When the disease arises, the sick ought to be removed to a clean and well-aired room in the most remote part of the house, and as much separated from the rest of the family as possible; his bed-linen should be changed frequently; his body be kept clean; whatever comes from him, either by stool or urine, be immediately removed and emptied; and his chamber be well ventilated by allowing a free admission of fresh air into it; it may likewise be sprinkled frequently with warm vinegar, in which some of the aromatic herbs have been infused. No fire should be kept in the room. In summer the patient should be covered only with a sheet, and in winter with a single blanket above the sheet. The good effects which arise from removing patients in this fever from contaminated air, are particularly remarkable among the poor; for a great many of them will recover when brought to an hospital or ward of recovery, although they take little or nothing medicinal: whilst those who remain at their own houses and have the best medicines and attendance, will sink rapidly. None but the necessary attendants should have any communication with the sick; and these, to guard against contagion, should avoid sitting down on the patient's bed; and they must likewise carefully avoid inhaling the vapour arising immediately from his body. When near him, they may keep a sponge or handkerchief, moistened in camphorated spirit or vinegar, to the nose and mouth.

In every species of typhus, direct and immediate exhalations from the sick, provided there is a sufficient approximation or actual contact of another, are indisputably equal, in some cases, to the infecting such person, even when the most minute attention shall have been paid to cleanliness and ventilation.

In hospitals, camps, and on board of ships, where a number are unavoidably crowded together, so as to render it impossible to cut off the communication between the healthy and the diseased, the simple means before recited will not prove sufficiently powerful for destroying the contagion, and therefore others must be adopted. In all such instances, besides well fumigating the apartments, clothes, beds, bedding, and hammocks of the sick, as hereafter advised, changing them frequently for fresh ones, paying the strictest attention to cleanliness in every respect, well ventilating every place where they are lodged by a constant and free admission of fresh air,—we should oblige those in health, as well as those tainted by the contagion, to undergo daily ablution with cold water.

Nitric acid has been used by the late Dr. Carmichael Smyth, as a

fumigation, with great success in this fever. In the year 1780, the disease broke out among the Spanish prisoners confined in Winchester Castle; he embraced the opportunity of giving the remedy a fair trial, and obtaining the most decisive evidence of its happy power in preventing the spreading or farther communication of the infection. He found he could use it without risk or inconvenience to respiration, and therefore thought it the most proper antidote to be applied, where persons are unavoidably obliged to be present.

The Doctor's mode of obtaining nitric acid gas, is by decomposing nitre by means of heated sulphuric acid, which may be done as follows: Put half an ounce of this acid into a crucible, glass, china cup or saucer, and warm this over a lamp, or in heated sand, adding to it, from time to time, some nitre: these vessels he directs to be placed at 20 or 30 feet distance from each other, according to the height of the ceiling and the virulence of the contagion. In hospitals and prisons, he advises the lamps or vessels containing heated sand to be placed on the floor; but on board of ships, he recommends to hang them to the beams by waxed silk cords.

From the well-known efficacy of the sulphuric acid in destroying contagion, he advises it to be employed as a fumigation for clothes and furniture, &c.; but for purifying empty prisons, hospital wards, and ships, he gives the preference to the nitric, its vapour being more volatile and penetrating, and not leaving the disagreeable smell which the sulphuric does, and thinking it at the same time equally efficacious.

Monsieur Guyton Morveau, in his treatise on the Means of purifying Infected Air, claims the merit of being the discoverer of the power of the mineral acids to destroy contagion, and endeavours to establish the superiority of the muriatic acid over all others. Upon a full investigation of the matter it appears, however, that the power of mineral acids to destroy contagion was known to Sir John Pringle as early as the year 1750, and their utility for that purpose was mentioned by Dr. Johnson in his pamphlet published in 1758, in which we are told that the vapour of muriatic acid was successfully employed by him in correcting the contagion of a very malignant fever, which had raged at Kidderminster two years before that period.

Dr. Smith has also claimed the having been the first who used the mineral acid gases in the apartments of the sick, and has alleged that they never had been employed by Dr. Johnson but in places where no one was present, or whence the sick were removed. This opinion has been refuted by Dr. Johnson's son, and the invention of his father most incontestibly established*. What Dr. Smyth seems therefore entitled to is, the merit of having

* See Dr. John Johnson's Reply to Dr. Smyth.

brought the discovery into public notice, and of having applied and extended it to general use.

It seems of little consequence whether we employ the nitric acid or the muriatic, in the form of gas, for the purpose of destroying contagion and purifying infected air, as the powers of both are extensive and certain. The muriatic is, however, thought to be more diffusible than the other. When we give it the preference, it may be used in the following manner:—Put one pound of common salt into an earthen vessel, and pour over it, from time to time, a small quantity of sulphuric acid, till the whole salt is moistened. If the air is foul and peculiarly offensive, apply a gentle heat under the vessel, to extricate a larger quantity of vapour; but, in general, the simple addition of the acid to the salt will be found sufficient, unless the apartment is very large.

The most effectual, however, of all fumigations, is perhaps the following, but it requires some nicety. Take of manganese in powder two parts, the same of common salt, of sulphuric acid three parts, and of water one part. Put an ounce of the mixed manganese and salt into a basin, add of water a large tea-spoonful, then drop in half a tea-spoonful of sulphuric acid, and repeat this till you have used a tea-spoonful and a half of the acid. In this manner keep up a sensible extrication of the fumes.

On the appearance of typhus or any infectious disorder in a gaol, or hospital, work-house, garrison, transport-ship, or any other place where many persons are crowded together, we should not fail to advise one of these gaseous fumigations in every room, in addition to a free ventilation and the greatest cleanliness. The same steps should be adopted in academies, boarding-schools, and even our dwelling-houses.

Of the YELLOW FEVER, or TYPHUS ICTERODES.

This disease takes its name (improperly, however,) from one particular symptom; but which, although pretty general, is by no means universal, nor even essential to its existence. By Sauvages, it has been denominated typhus icterodes: by Cullen, typhus cum flavidine cutis; by the French, la maladie de Siam, and fièvre des matelots: and by the Spaniards, vomito prieto.

Of late years this fever has prevailed throughout the several colonies in the West Indies, and over a great portion of the American continent; from which places it extended in a short period to the southern parts of Europe, and has nearly equalled the plague in its devastation.

With respect to the origin of the yellow fever in America, there has prevailed a great difference of opinion; some supposing it to have been introduced from the West Indies: and others, that it took its rise from the exposure of putrid animal and

vegetable substances on the public wharves of the city of Philadelphia; which opinion is strongly supported by Dr. Rush, as he found that the streets adjoining to these wharves were the first in which the disease made its appearance, and that in several instances it could be clearly traced from thence to other parts of the city. Let this be as it may, it is evident, from the report of Dr. Chisholme, and others who have written on the disease, that the fever which prevailed in Philadelphia was exactly the same with that which raged in the West India colonies.

Dr. Clarke informs us, that there appears to have been such an extensive and very peculiar deranged state of the atmosphere in the towns of the West Indies and in North America, that it is more probable the disease was produced by this general cause, breaking out nearly at the same time in these different places, than that it was carried from the one to the other, either by persons or in any kind of goods or merchandise.

We are informed by Dr. Miller of New York, that the yellow fever in America always begins in the lowest part of a populous mercantile town near the water, and continues here without much affecting the higher parts. It rages most where large quantities of new ground have been made by banking out the rivers, for the purpose of constructing wharves. The appearance and prevalence of the yellow fever in low situations, have led to the belief, he tells us, that the disease was imported by ships from the West Indies. But a person seized with this fever in an affected part of the town, and conveyed to one that is healthy, or carried into the country, does not communicate it, he asserts, to the neighbourhood, nor to those immediately around him. He therefore is of opinion, that the yellow fever is generated by the impure air or vapour which issues from the new-made earth or ground raised on the muddy and filthy bottom of rivers, and which deteriorate the air above it, in like manner as air becomes offensive and injurious when it approaches or passes over a body of vegetable or animal matter in a state of putrefaction.

It appears that the shores of the rivers of New York and Philadelphia have undergone great and rapid alterations from their natural state within a few years, on account of the vast increase of commerce, and for the sake of making wharves; and Dr. Miller mentions, it is only in such parts where these alterations have taken place, that the yellow fever has been produced. The parts where little or no alteration has taken place on the East and North river, and which continue in nearly their natural state, do not produce the yellow fever. He adds, eighty new wharves have been made since the war; the consequence of which has been, that great quantities of filth and corruptible matter, deposited in the muddy bottom of the river contiguous to the shore, and which produced no ill effect while exposed to the air and washed twice every four-and-twenty hours, have been covered

over several feet deep with new earth, and closely pent up so as to exclude the tide. It is in these places, and these only, that the yellow fever is produced, we are told.

On the other hand, we are informed by Dr. Hosack, the learned Professor of the Institutes and Practice of Medicine in the university, New York, as well as by Dr. Francis, and other physicians of eminence in America, that the yellow fever did not originate there from domestic causes, but was exclusively of foreign origin*, and contagious in a confined deteriorated atmosphere and unventilated situations. Dr. Hosack, indeed, in a still later publication † has brought forward strong arguments, and in my opinion full evidence, that the fever in question arose from imported contagion, and neither was of domestic origin, nor the product of decomposed animal and vegetable matter.

Dr. Bancroft‡ is of opinion, that the only existing cause of yellow fever is the application of marsh miasma to the human body, and that the disease is really a marsh remittent fever. He thinks himself justified, from repeated observations, in concluding that the joint influence of marsh miasma, and of an atmosphere unusually and sufficiently heated, upon persons habituated to a cold or temperate climate, is, of itself, fully capable of causing an epidemic yellow fever, resembling that which has committed such ravages in the West Indies, the United States of America, and the south of Europe. We are told by him, that the common bilious remittent of hot climates, which is universally admitted to be the effect of miasma, differs from the yellow fever only by being less violent; that at the utmost their symptoms only vary in degree, and consequently the danger being greater in the latter than the former, for the yellow colour appears in both.

Some have imagined, that the fever, which has occasioned such devastation, is totally of a different nature from the yellow fever formerly met with in the West Indies and other tropical climates; but in my opinion, it seems to be the same, and that its only difference consists in its having prevailed as an epidemic, from the subsisting vitiated state of the atmosphere, and from its having, from other concurring circumstances, acquired a degree of malignancy and virulence unknown before.

During a residence of nine years in the West Indies, from 1776 to 1785, I had frequent opportunities of meeting with the yellow fever among seamen, and such new-comers as were imprudent on their first arrival; and although the disease never prevailed during that period epidemically, still I looked upon it as capable, under certain circumstances, of being communicated from one person to

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* See American Medical and Philosophical Register.
† See his Discourse on the Medical Police of the City of New York.
‡ See his Essay on the Disease called Yellow Fever.

another. We ought to be aware that a fever, not contagious at its commencement, may acquire that character from confined air, filth, and accumulation; then why deny that the same may take place during the prevalence of typhus icterodes? I think it ought to be admitted, that the fever which has prevailed of late years, both in America, the West Indies, and Spain, is a contagious or communicable disease in an impure atmosphere; but where great cleanliness is observed, and the air preserved pure and free from noxious particles and materials, by a free ventilation its contagion may be counteracted. The admission of this doctrine will readily account for the apparently contradictory facts which have been brought forward by the advocates of the two opposing opinions.

As by removing a patient labouring under this fever to a healthy situation, and keeping him very clean, and the apartment well aired, those who are inmated with him rarely become affected, it has been assigned by some practitioners as a reason why this fever cannot be considered of a contagious nature. During its first stage, probably it may not; but still I am of opinion that whatever may be the original nature of the yellow fever, as well as some others, if permitted to run a protracted course, it may by a neglect of cleanliness and ventilation, become highly contagious in its after stages.

It is probable that marsh exhalations, and the effluvia arising from putrid vegetable and animal substances, under a concurring vitiated state of the atmosphere, were the causes which gave rise to this fever; and that it was afterwards kept up by contagion, heightened, by various accidental circumstances, to a pestilential degree of violence. Very hot and sultry weather, with a long drought, will greatly predispose to the prevalence of this fever as an epidemic, in all tropical climates; and it may have a similar effect in America, where the summer months are intensely warm.

It has been ascertained, from tables and records for the last twenty years, that in Philadelphia the yellow fever does not prevail when the months of June and July do not exceed 70° Fahr.; but that in every summer since 1793, whenever the average heat of those months has exceeded 79°, then the fever has raged, and that it has been most mortal in those years in which the thermometer has indicated the greatest altitude.

Dr. Rush and a few others are of opinion that the yellow fever is not contagious in its simple state, and that it spreads exclusively by means of exhalations from putrid matters, which are diffused in the air: and Dr. Bancroft tells us, that of the many thousands who in the West Indies, as well as at Charleston, Norfolk, Baltimore, Philadelphia, New York, &c., were removed beyond the reach of marsh miasma, whilst labouring under the disease or after having imbibed the poison, though in many of these the disorder appeared under its worst forms, and proved fatal, still it has never been communicated to others. This point, however, has by no means been satisfactorily established; and some facts which have been brought

forward by Sir James M'Gregor*, and others, which are inserted in the American Medical and Philosophical Register†, very clearly show that this fever may be communicated by contagion. Moreover, the Reports of Sir James Fellowes, lately published, tend completely to refute the very mischievous doctrine, that the pestilential fever of America and Spain, &c., is not contagious. Whoever will take the trouble to peruse Dr. Gilbert Blane's letter to the Admiralty, bearing date the 15th of December, 1823, with respect to what occurred on board two ships of war, at the Island of Ascension, must be fully convinced of the contagious nature of the yellow fever. It places this beyond a possibility of doubt.

Contagion, perhaps, may not be necessary to originate the yellow fever, or it may not propagate the disease unless aided by exterior circumstances favourable to its agency; but we want facts of a more positive kind, in order to prove that no virus is formed in the body of an individual labouring under this fever, capable of impregnating another with a certain quantum at least, if not kind of disease.

By diffusion in the open air, the disease may rarely be communicated from one person to another in country situations, where there is a constant circulation of fresh air; but in confined and unventilated situations, where cleanliness is neglected, I am decidedly of opinion that its contagion may as readily be propagated as that of typhus gravior, the gaol or hospital fever.

Several of the distinguished writers on yellow fever have asserted that the constitution is invulnerable to the operation of its contagion a second time; but this point has not been satisfactorily ascertained. If a fact, (which I greatly doubt) the exemption may possibly be the result of the reduction of the plethoric constitution of the new comer, which at first so much predisposed him to an attack of the disorder.

The persons most liable to be attacked by this fever in the West India Islands, were the Europeans who had lately arrived; and hence it was, that the troops sent out to recruit our armies, and the seamen to strengthen our fleet, fell its earliest victims. Women were observed to be less liable to its attacks than men, and children still less so than these; and the people of colour were by no means so apt to be seized with it as the whites. When the disease did appear among them, it was always much milder, owing most likely to their necessary temperance. Persons of a full plethoric habit, and that were intemperate in their mode of living, were much greater sufferers by it than those of a lax fibre, and who were guilty of no irregularity. Young people born in the West Indies, and educated in Great Britain, and persons having resided some years in England, after they had passed a great part of their lives between the tropics, were

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* See his Medical Sketches. † Volume II. page 22.

observed to be liable to an attack of this fever on their return to the West Indies.

There is evidently something peculiar to the constitution of people from a cold country, which renders them more obnoxious to fever in a warm climate than either the natives or those who have been assimilated to it by a long residence. Accordingly we find, that the same exposure to the causes, predisponent and occasional, will produce fever in a stranger, while the native or old inhabitant remains in good health; and the symptoms will be tenfold more urgent in the one than the other, supposing both are attacked. Hence it happens, that long residents, and natives in general, are not very liable to the yellow fever in its continued and malignant form; but when they are attacked with the remittent of the country, the symptoms partake more or less of the nature of the prevailing epidemic. In persons of the former class, the body, from long exposure to the influence of the climate, has become creolized, approaching to the conformation of the natives, by having their original firmness of fibre reduced to the appropriate standard for continuing the healthy action under exposure to preternatural heat.

The heat of the body of new-comers in the West Indies has been noticed, by Dr. M'Kitrick, to be between three and four degrees above that of the temperature of the natives: and to this he ascribes, in part, the predisposition of new-comers to the yellow fever. A disposition to take on an inflammatory action has been assigned, therefore, as the reason why Europeans, within the first few months after their arrival in the West Indies, are so obnoxious to this fever.

Not only does the yellow fever invade Europeans newly arrived in the West Indies in preference to creoles, negroes, and those who by a long continued residence have become acclimated, but even among those Europeans who happen to be susceptible, the most healthy and robust, and in general those who are earliest subjected to great exertions, and a high degree of temperature, are soonest seized, and more rapidly destroyed, than those of laxer fibres, or those who have had an opportunity of becoming more gradually inured to the climate.

In North America it also happens, that the inhabitants who constantly reside in the most southern States are seldom attacked with this fever in its violent form, while those of the north-east States are destroyed by it in great numbers; but even in these districts it has been remarked, that it more readily seizes strangers from Europe, or peasants from the interior provinces, than the natives of the towns in which the disease prevails. The inhabitants of the southern States, from being subjected to constant heat, approach in constitution nearly to the creoles or natives of the West Indies; but those residing in the more northern States, although exposed to a high degree of heat during the summer, can never become creolized, (if the expres-

sion may be allowed), on account of the intervening winter, which annually renews the predisposition, and creates a susceptibility to the disease; still, from living during a part of the year in excessive heat, the inhabitants of the place where the disease prevails are in some degree less susceptible of the most malignant form of the fever than strangers from Europe, or peasants from the inland districts, whose more dense and rigid fibres renders them peculiarly predisposed.

It is therefore obvious, that the strongest men, those of the most dense and rigorous fibre, are particularly subject, both in America and the West Indies, to the high degree of the yellow fever; and are most frequently and rapidly destroyed by it. Women, children, convalescents from former malady, and those who have been reduced by the use of mercurial remedies, are less frequently the objects of its attack; and when it happens to seize them, it is usually milder, and less rapid in its progress. In these classes, the state of the animal fibre, either from original conformation, or from eventual circumstances, more nearly approaches to that of the creoles and natives*.

Dr. Pinckard, who was a physician to the army in the West Indies, from having observed this fever exhibited such instability, and varied so incessantly in its character, that he could not discover any one symptom to be decidedly diagnostic, has been induced to offer it as his opinion, that the yellow fever so called is not a distinct or specific disease, but merely an aggravated degree of the common remittent or bilious fever of hot climates: rendered irregular in form, and augmented in malignity, from appearing in subjects unaccustomed to the climate.

Dr. Jackson also views this disease as only a modification or very high degree of the common fever of the country.

The yellow fever is excited into action by a variety of causes; the chief of which are, intemperance, excessive fatigue in the sun, checked perspiration by being exposed to a current of air, or sleeping exposed to the dews, costiveness, &c. In fact, whatever proves an exciting cause of fever in any country, is equally so in the West Indies, but it is not the same species of fever that is generally induced.

The yellow fever usually attacks with lassitude and weariness, chilly fits, listlessness of every thing around, faintness, giddiness, flushing of the face, redness of the eyes, pains in the eye-balls and lower part of the forehead, as likewise in the back, debility, and sighing, thirst, and a tendency to coma; the urine is high-coloured, small in quantity, and turbid; the perspiration is irregular, interrupted, and greatly diminished; the saliva is viscid; the tongue is covered over with a dark fur; the bile is secreted in unusual quantities, and thrown into the stomach, from which it is again speedily ejected; and the skin is hot, dry, and hard.

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* See Notes on the West Indies, by George Pinckard, M. D. Letter LIV.

The disease continuing to advance, the eyes become of a deep yellow; the face and breast are tinged with the same hue; an incessant retching and vomiting of frothy bile ensues; great costiveness prevails, and peculiar delirium arises, which is attended with a permanent dilatation of the pupils of the eyes.

There is hardly ever an evident remission until the fever has entirely gone through its first stage, which is generally in thirty-six or forty-eight hours; when there is often such an abatement of the symptoms as to induce the patient to think himself tolerably well: but an early recurrence of the symptoms in an aggravated form, accompanied with extreme debility, soon convince him of the contrary.

In the last stage of the disease, the greatest debility prevails, and symptoms of universal putrefaction arise; large patches of livid spots are to be observed on different parts; the tongue becomes dry and black, the teeth are incrusted with a dark fur, the breath is highly offensive, the whole body exhibits a livid yellow in many cases, but not in all; hæmorrhages break forth from the mouth, ears, and nostrils, dark and fetid stools are discharged, hiccups ensue, the pulse sinks, and death follows very quickly.

These are the usual appearances to be met with; but great irregularities have been observed by different practitioners. Dr. Chisholme mentions, that he often found patients, without any previous complaint, suddenly become giddy, lose their sight, fall down almost insensible, and remain in that state for half an hour and upwards; the body then became overspread with a cold sweat, and this was succeeded by intense heat, a quick, small, hard pulse, violent pain in the head, particularly in the forehead, great anxiety about the præcordia; the eyes were much inflamed, watery, protruded, and wildly rolling; the face was much flushed; there was great heat at the pit of the stomach, with nausea, frequent retching and vomiting, as also severe pains in the small of the back and calves of the legs.

During 12, 18, 24, or 36 hours, he found all these symptoms continue to increase, except the quickness and hardness of the pulse, which were not materially changed; and that they were then succeeded by general coldness, clammy sweats, and a greater or less degree of coma or delirium. Life, in this case, was lengthened out to sixty or ninety hours from the attack. A short interval of reason perhaps took place, the patient considered himself better, and flattered himself for the moment with the hope of recovery; but a fit, as sudden and as unexpected as the first, came on, during which he rolled his eyes dreadfully, foamed at the mouth, and threw out and pulled back his extremities in violent and quick alternate succession. Dr. Chisholme observed, that in general the patient expired in this fit; but in a few instances he recovered from it, and continued rational for a short time, when another has ensued and carried him off.

He noticed, that in a few instances the patient complained of violent pains in the testicles, and on examination, he perceived them much lessened in size and retracted, with an excoriation of the scrotum: now and then he found a remarkable change in the voice, and that it became weak and shrill; in a few instances he could discover little or no yellowness of the skin.

Dr. Rush says, the disease appeared with different symptoms in different people: he observed the premonitory signs of it were, costiveness, a dull pain in the right side, defect of appetite, flatulency, perverted taste, heat in the stomach, giddiness or pain in the head, a dull, watery, brilliant yellow, or red eye, dim and imperfect vision, a hoarseness, or slight sore throat, low spirits, a disposition to sweat at nights, or after moderate exercise, or a sudden suppression of night sweats. More or less of these symptoms frequently continued for two or three days before the patients were confined: and in some they continued during the whole time of the prevalence of the fever in the city of Philadelphia, without producing the disease. Many went to bed in good health, and awoke in the night with a chilly fit; many rose in the morning after natural and regular sleep, and were seized at their work, or after a walk, with a sudden and unexpected attack.

He observes, that it frequently came on with a weak pulse, and often without any preternatural frequency or quickness: and that, in some instances, it was so low as not to be perceived without pressing hard on the artery; in some cases, the pulse intermitted, and these intermissions occurred in several persons who were infected, but who were not confined by fever; in others, there was a more than ordinary slowness of the pulse, which was now and then accompanied with a dilated pupil of the eye. Hæmorrhages happened at the commencement of the disorder, chiefly at the nose and uterus: and as it advanced, the discharge of blood became more universal, and then issued from the gums, ears, stomach, bowels, and urinary passage.

Many complained of a dull pain in the region of the liver, but few felt any soreness to the touch, or pain at the pit of the stomach; in some, a determination of blood took place to the lungs, but the brain was chiefly affected with morbid congestion, which was indicated by the suffusion of blood in the face, redness of the eyes, dilatation of the pupils, pain in the head, hæmorrhages from the nose and ears, by sickness or vomiting, and by an almost universal costive state of the bowels.

With respect to the secretions and excretions, there appeared to be a preternatural flow of bile, which was discharged from the stomach and bowels in large quantities, and of very different qualities and colours, being in some cases yellow, and in others black. The urine was sometimes plentiful and of a high colour; sometimes it was pale, and at others it was small in quantity and turbid: moreover sweats of a yellow colour.

and highly offensive to the smell, often broke out. On the first and second day the tongue was invariably moist and white; but as the disease advanced, it became red, and put on a smooth shining appearance: towards the close, a dry black streak appeared in its middle, which gradually extended to every part of it.

The effects produced on the nervous system were different, according as the fever affected the brain, the muscles, the nerves, or the mind. In a few instances, apoplexy was induced, which usually proved fatal; tremors of the limbs, and twitching of the tendons, were common; delirium was a frequent symptom, but many passed through the disease without the least derangement of ideas; in some cases, the pain in the head was acute and distressing; and the stomach, towards the close, was affected with burning or spasmodic pain of the most severe nature.

The senses and appetites exhibited several marks of the ravages of this fever upon the body. Deafness and dimness of sight sometimes took place. Thirst, and want of appetite, were present, as in most other fevers. The convalescence was marked by a sudden renewal of the propensity to venery.* Swellings in the inguinal and parotid glands took place in a few instances, which did not proceed to suppuration. In some cases, the skin was preternaturally warm; in others, it was cooler than in health. The yellow colour was by no means universal: when it took place, it was seldom to be observed before the third day, but more frequently about the fifth or seventh from the first attack. The eyes seldom escaped a yellow tinge. There were eruptions of various kinds on the skin, and in the latter stage, petechiæ were common; carbuncles also took place in a few cases.

The disease ended in death in various ways. In some, it was sudden; in others, it came on gradually. The last hours of some were marked with great pain and strong convulsions: but, in many, death seemed to insinuate itself into the system with all the gentleness of natural sleep.

In every case that came under Dr. Rush's care, there were evident remissions or intermissions of the fever, or of such symptoms as were substituted for it. The disease continued for 15, 20, or 30 days in some people. He observed, that all were affected by it; but persons in the prime of life were most liable to it. Men were more subject to its attacks than women. He likewise observed, that the refugees from the West Indies universally escaped it; whereas the natives of France, who were settled in the city of Philadelphia, were much annoyed by it; and he found that the people of colour took the disease in common with the white people, but in them it was usually much milder.

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* The same is frequently noticed on recovering from the plague.

Critical days were hardly ever distinguishable in this fever, nor was the crisis often very evident. Sometimes a copious perspiration put an end to it; and at others, the return of sleep, an hæmorrhage from the nose, or sudden diarrhœa, carried it off.

Dr. Fordyce was of opinion,* that typhus icterodes ought to be regarded rather as an irregular semi-tertian than as a continued fever; for it often happens that a patient becomes greatly relieved, and appears to be recovering, when all at once a fresh attack takes place, and carries him off. He thinks that the dark brown colour of the skin in this fever arises rather from a greater secretion of the matter secreted by the sebaceous glands of the skin, than owing to a quantity of bile getting into the blood-vessels. In support of this opinion, he observes, that the colour is very different from that which takes place in jaundice. The evacuations from the intestines have not that clay-like appearance which is common in jaundice. The secretion from the kidneys has not that dark yellowish brown, nor that thick sediment, which have almost always been noticed in those persons in whom bile has got into the blood-vessels.

The dark brown matter which the patient throws up by vomiting, he thinks, has the appearance of the matter observed upon the tongue in very violent fevers; and that probably it is formed on the surface of the stomach, and perhaps of the duodenum, or even on the beginning of the jejunum. The force of the exertions in vomiting often occasions a greater quantity of bile to be secreted, and so to be thrown back into the stomach, and be brought up with the dark brown matter. When this happens, it gives to the fluid thrown up, he observes, the taste and appearance of bile. At other times, however, there is no appearance of bile at all, but only of this dark brown matter.

Dr. Bancroft is of opinion,† that the black matter thrown up in this fever is merely blood which has been effused from some of the small arteries, ruptured in consequence of the suppuration of certain portions of the villous coat, and has coagulated within the cavity of the stomach, or on the surface over which it was effused; and having been afterwards detached and triturated by the violent and frequent contractions of that organ in the efforts to vomit, has had its appearance as a coagulum of blood altered, and its colour darkened by the gastric juice, or by some chemical decomposition, either spontaneous or produced by the action of the air, or other matter contained in the stomach.

Dr. Jackson‡ thinks that the black colour of the matters ejected from the stomach, or discharged by the anus in the latter stages of this form of fever in the West Indies, owes its origin

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* See his Fourth Dissertation on Fever.

† See his Dissertation on the Yellow Fever.

‡ See his Sketch of the History of Febrile Diseases, as they appear in the West Indies among the Soldiers of the British Army.

to an admixture with diseased secretions from the mucous membranes of the whole gastric system, more particularly of the liver. He observes, the secretion is ropy and clear during the early periods of the disease, becomes brown or black in the latter; sometimes black as soot, more particularly in persons where the head and stomach are simultaneously affected, and where no strong vascular action takes place during the course of the disease.

Concerning the nature of the black vomit, various opinions have indeed been entertained. Some have considered it as consisting of putrid bile; some as composed of a mixture of blood and bile; some of the villous coat of the stomach dissolved in the progress of inflammation, terminating in sphacelus; and others, of bile mixed with the septic acid contained in the alimentary canal.—Dr. Cathrall, of Philadelphia,* considers all these opinions as erroneous, and offers it as his, that the black vomit is an altered secretion from the liver. We are informed by him, that the black vomit, or matter so called, appears to be of two kinds; one consisting of a number of flaky particles, resembling the grounds of coffee; the other, of a dark-coloured inspissated mucus. From various and repeated experiments, he concludes, that the black vomit, besides a considerable proportion of water tinctured with resinous and mucilaginous substances, contains a predominant acid, which is neither the carbonic, phosphoric, or sulphuric, but hints it may be the muriatic.

It appears from Dr. Cathrall's experiments, that the black vomit, when applied to the most sensible parts of the body, produced little or no effect. It likewise appears, that large quantities of this fluid may pass through the stomach and bowels of quadrupeds and other animals, without apparently disturbing digestion, or affecting the health. This fact incontestably proves the inactivity of this fluid, and renders it probable that the speedy death which ensues after this discharge in yellow fever, is not from any destructive effect of this matter on the stomach and bowels, but most likely from the degree of direct and indirect debility which had been previously induced. Another fact which has been proved by this gentleman's experiments is, that an atmosphere highly impregnated with the odour of the black vomit recently obtained, would not produce fever, apparently under the most favourable circumstances.

The yellow fever differs from typhus gravior in the following circumstances, viz.—it usually prevails only during, or immediately after very hot seasons, in which typhus is soon extinguished; and it is in its turn completely annihilated upon the accession of cold weather, in which typhus is commonly most prevalent, particularly if accompanied with humidity of the atmosphere. It attacks most readily and violently the young and robust, over whom

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* See the New-York Repository for 1800, for his Memoir on the Analysis of the Black Vomit, ejected in the last stage of this fever.

typhus is allowed to have the least power; it begins with much greater exertions of the living power than typhus, is attended with many symptoms of a different nature, and it frequently changes into a regular remittent, and sometimes even to an intermittent fever, which true typhus is never observed to do.

It differs from the plague, in that it prevails only in those countries, and in those seasons, in which the heat is, or has recently been, so great as to destroy or stop the progress of the plague; in the inter-tropical climates, therefore, so favourable to the existence of the yellow fever, the plague is unknown. The glandular and cutaneous affections called buboes and carbuncles, so constantly accompanying the plague, are seldom met with in the yellow fever. A violent febrile paroxysm is essential to the character of yellow fever; whilst, according to the best authorities, persons have been attacked by the plague without having the least febrile affection.

In forming an opinion as to the event of the yellow fever, we must have in view the nature of the symptoms, the mode of attack, and the age and habit of the patient. Youth, and a plethoric state, are invariably circumstances of danger. A sudden oppression of all the functions at once; great debility; weak, irregular pulse; sighing; severe vomiting of dark matter; tremors of the body when moved, with a tendency to faint on the slightest exertion; pensive sadness in the countenance; and a dilatation of the pupils of the eyes, with coma; are signs of great danger. Very few recover from that stage in which a black vomiting is the prominent symptom. Black and fetid discharges by urine and stool, the breath being highly offensive, and the appearance of petechiæ, portend almost certain death.

The symptoms that we may regard as favourable are, a settled state of the stomach, lessened headach, eyes lively, appearance of an eruption on the skin, (known in tropical climates by the name of prickly-heat,) free perspiration, copious and high coloured urine, bilious flux, and sound sleep. No disease, however, exhibits a greater variety of symptoms, and often less to be depended upon, than this; for sometimes it goes on with favourable appearances, then suddenly changes to the worst, and sometimes patients apparently almost in a state of convalescence, expire in a few hours.

Dissections of the bodies of those who have died of the yellow fever have shown the coats of the œsophagus corroded; the stomach and intestines loaded with a black fetid matter, or both to be often much inflated, inflamed, and sphacelated; the liver, in many cases, to be shrunk to less than half its natural size, very flaccid, and of a colour approaching to buff; and the gall-bladder to be flaccid and greyish, having but little bile contained in it. In some instances the lungs have been found inflamed; and the bladder has been observed to be much thickened, and to contain a considerable quantity of urine. In those cases where there has

been a discharge by vomiting of a black coagulated matter resembling the grounds of coffee, the gall-bladder and biliary ducts have been found distended with the like substance. Where an affection of the head has formed a prominent feature of the disorder, the integuments of the brain have been observed more or less inflamed, the vessels of the dura and pia mater to be very turgid with blood, and occasionally there has been extravasation. Sometimes the volume of the brain has been found increased, and the substance of it more firm than usual.

The same difference of opinion which arose among the professional gentlemen of America, with regard to the origin of the disease, seems likewise to have subsisted between them as to the mode of treatment to be pursued; some recommending and adopting the antiphlogistic plan, by bleeding, purging, and a low diet; some, the stimulant plan, with a liberal use of the bark, wine, opium, and the cold affusion; and others, again, either purged moderately with calomel, or bled on the first or second day of the fever, and then resorted to a free use of bark, wine, laudanum, and aromatic tonics: and this practice they adopted on the supposition that the disease was inflammatory in its first stage, and putrid in its last.

According to the report of Dr. Rush, this last mode of treatment was scarcely more successful than the tonic and stimulant one; and that which he found to succeed best was the antiphlogistic, pursued even to a degree of extreme rigour; for we are given to understand, that although in some instances he allows of one or two moderate bleedings being sufficient, still, in most cases, he was in the habit of repeating the operation much oftener, and of drawing off a considerable quantity each time, even from the poor who resorted to his house for advice.

Whether or not bleeding may be practised with advantage to the patient in America, or to what length it may be carried, I am not capable of determining, never having been on that continent; but being well acquainted with the climate of the West Indies, from a long residence there, and having often met with the disease, (although not under its very malignant form,) I must concur with the objectors, who contend that, in tropical climates, venesection resorted to among the natives, and such others whose bodies and constitutions have been perfectly assimilated to the climate by a long residence, cannot in general produce a good effect: the reduction of tone, which a certain period of residence occasions in the constitution of Europeans, as well as of the natives, renders it unnecessary; but when this fever has attacked new comers of a vigorous constitution and in rude health, but more particularly soldiers and seamen, (who bear phlebotomy better than any class of people in private life,) then I am ready to admit, that the abstraction of blood soon after the seizure, or during the early stage, may be beneficial, if the quantity drawn off is in due proportion to the age, habit, and other circumstances

of the patient. When the fever is completely formed, or is of a longer standing than 36 or 48 hours, it will bid defiance to depletion by the lancet, and then, instead of proving serviceable to the patient, will be highly injurious.

Dr. Clarke, in his treatise on this disease, mentions, that no native recovered when the lancet had been used; and Dr. Chisholme observes, that although the blood drawn, in the cases where this remedy was employed, appeared remarkably florid, and always threw up an inflammatory crust of greater or less thickness, and although the pains seemed to undergo a temporary mitigation, yet the consequence, at the expiration of a few hours, was always fatal, notwithstanding the patients were remarkably robust, florid, and generally in the vigour of life.

Dr. Hector M'Lean, who has likewise published on this fever, is one of the few West India practitioners who approves of bleeding. He observes, that the determinations to particular organs which take place in the disease, and which constitute its greatest danger; the marks of inflammation, which dissections have shown in the stomach and biliary organs, evidently point out the propriety of this evacuation. He adds, that experience confirmed its utility; for his practice was much more successful after he had adopted blood-letting, than before. By way of caution, he mentions, however, that it is only in the very early stages he thinks it advisable to have recourse to the operation, and that if it is not performed as early as the second, or at farthest the third day, he apprehends it will not be successful.

Dr. Jackson in his Exposition of affusing Cold Water in the Cure of Fever, tells us, that he holds a subtraction of blood in large quantity to be a most decisive process in the more intense and concentrated forms of the endemic fever of the West Indies, and that the remedy produces a condition susceptible of being more readily acted upon afterwards by cold affusion, and the other means we may employ. He adds, that whatever may be the precise quantity necessary to produce the effect, it must always be supposed to stand high, and seldom lower than thirty ounces; in strong athletic European soldiers, recently transported to a tropical climate, sometimes far above it.

In a work* of a later date he mentions, that he is fully warranted by long experience and attentive observation to say, that venesection, prescribed with consideration and conducted with management in execution, is both a safe and powerful remedy, either decisive of curing from its own effect, or preparatory of the curative effect of others. If there be no prohibitory circumstances in the case, one bleeding, he says, is to be preferred to repeated small ones: for although the latter diminish violence, and thereby avert the destruction of organic structures, they do not prevent

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* See Dr. Jackson's Sketch of the History of Febrile Diseases among the Soldiers of the British Army in the West Indies.

the diseased action from proceeding, in the regular process of what he terms coction, to a constituted period of formal crisis. He however readily admits, that bleeding in a large, or even in any quantity, is not invariably or uniformly either proper or safe.

A late writer* on the yellow fever says, that it is only by a copious abstraction of blood employed while the fever is forming, or within a short time after it is formed, aided by purgatives, and by the cold affusion if indicated, that we can entertain any plausible expectation of arresting a disease where the morbid motions are of such rapidity and power. He very properly observes, at the same time, that the ability with which men bear the loss of blood will much depend upon the habit and locality, and its efficacy on the early stage of the disease.

Dr. Bancroft is of opinion that bleeding may be resorted to in certain cases of the yellow fever, not only with safety but advantage, and he quotes himself as an example; but, he says, that the propriety of the operation, and the quantity of blood to be taken away, must be determined by the circumstances of the patient.

On a more intimate acquaintance with this species of fever than physicians possessed at first, many of those who have had most experience in attending patients labouring under the disease, now approve of venesection at the onset, or soon after its seizure.

To obviate the inflammatory diathesis which prevails during the first stage of the disease, and to take off the determination from the head, as well as to cleanse the primæ viæ of acrid and offending humours, we may employ gentle purging, so as to procure one or two evacuations daily during the continuance of the fever; but as the stomach is seldom in such a state as to be capable of retaining those purgatives which are in common use, besides a triple dose being generally necessary, it has been found best to administer the hydrargyri submurias, either by itself, or combined with jalap or extract. colocynth. c. as below.† If the first dose does not operate in due time, it is to be repeated. At the end of six hours or so, if the purgative has not yet been attended with the desired effect, it ought to be assisted by an enema, giving at

* See Treatise on the Causes of the Tropical Endemic or Yellow Fever, by J. H. Dickson, M. D.

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† 1. ℞ Hydrargyri Submur. gr. iv.
Pulv. Jalap. gr. viij.—xvj.
Syrup. Zingib. q. s. M.
ft. Pulvis pro dos.
Vel,
2. ℞ Hydrargyr. Submur. gr. vi.
Extract. Colocynth. C. gr. x. M.
Fiant pilul. iij.

† 1. Take Submuriate of Mercury, four grains.
Powder of Jalap, from eight to sixteen grains.
Syrup of Ginger a sufficiency to form a powder for a dose.
Or,
2. Take Submuriate of Mercury, six grains.
Compound Extract of Colocynth ten grains.
Mix them together, and form the mass into three pills.

the same time by the mouth about an ounce of magnesiæ sulphas dissolved in a little mint water

In no stage of typhus icterodes can emetics be administered with safety, owing to the disposition to vomit which usually prevails, and which it is often difficult to allay. Instead of prescribing emetics, we are to endeavour by every possible means to calm and allay the irritation of the stomach.

As there appears to be a morbid determination of febrile or inflammatory action in this disease upon the intestines, we may endeavour to counteract this disposition and produce an opposite determination by suitable diaphoretics, combined with opium in small doses, assisted in urgent cases by the warm bath, warm fomentations and a blister on the belly: taking care at the same time, to promote sufficient evacuations by stool, in order to relieve the intestines as much as possible from all irritation and uneasiness which they might suffer by a retention of hardened fæces and other matters.

Mercury being known to be a kind of specific in local inflammations of the liver, and there being evidently a great determination of blood to this viscus in the yellow fever, practitioners have been induced to employ it likewise with the view of exciting a degree of salivation; and where an incessant vomiting has prevented their using the submuriate of mercury in sufficient doses to effect this, they have substituted mercurial frictions. In some of the cases, where the hydrargyri submurias was administered with this view, its quantity was obliged to be increased to an almost incredible extent. Dr. Chisholme mentions a case, where 400 grains were given before the salivary glands were affected; and in the Medical Commentaries for the year 1795, Dr. Duncan, of Edinburgh, takes notice that a correspondent in Jamaica had reported an instance where, within the space of a few days, the patient had taken 270 grains of it, and had rubbed in twenty drachms of the strongest mercurial ointment, from which the happiest effects were at last produced.

On such authorities, and from the well-known efficacy of mercury in inflammations of the liver, it may, probably, be a proper and valuable remedy in typhus icterodes. To ensure its success, it should, however, be employed at the very commencement of the disease, and be so conducted as to effect the mouth before the dangerous symptoms of the second stage of the fever make their appearance. Dr. Currie, of Philadelphia, informs us,* that in every case in which he has seen mercury employed after the distressing and dangerous symptoms of the second stage had come on, it aggravated them and increased the danger; and that when resorted to after signs of what is called putrescency have made their appearance, it has invariably accelerated the fatal

* See vol. ix. page 102, of the Med. and Phys. Journal.

event, notwithstanding the declaration of Dr. Chisholme to the contrary.

In having recourse to mercury externally, we may direct half a drachm, or even a drachm of the strongest ointment to be rubbed into the thighs, hams, legs, and arms every four hours; and we may give hydrargyri submurias internally, either by itself, or combined with opium,* according to the state of the bowels. When a gentle ptyalism takes place, its use ought immediately to be omitted, and only nourishment and wine be given.

That many patients have recovered by a mercurial treatment, if early adopted, appears from Dr. Chisholme's excellent work, as well as from the practice of the naval and military hospitals in the different West India islands, and the reports given in by various private practitioners. In typhus icterodes, possibly, there may be congestions in the liver, both from an accumulated and imperfect secretion of bile; and mercury certainly possesses very stimulating and deobstruent qualities.

We are told by Dr. Bancroft, however, that mercury administered so as to produce a salivation, appeared to him to be extremely equivocal in its operation. He is of opinion that the good effects of the mercurial treatment have been greatly exaggerated; that many persons have died of this fever, although mercury administered externally or internally had produced a copious salivary discharge; and that in many others who have recovered, the discharge did not begin until after a solution or great mitigation of the fever, and therefore could not have been the effect of the salivation. He, however, deems the use of mercury as a purgative highly beneficial, and into this quality he is strongly disposed to believe its reported efficacy in all fevers is to be resolved.

At the first commencement of typhus icterodes, it is not unusual for a frequent vomiting to prevail. In such cases it may be advisable to wash out the stomach with an infusion of the flores anthemidis; but should it continue, stupes, wrung in a warm decoction of bruised poppy-heads, with an addition of one third part of camphorated spirit, may be kept constantly applied to the region of the stomach, and the saline medicine be administered (so as that the effervescence shall take place in the stomach) with an addition of about ten or twelve drops of tinctura opii to each dose. Sulphuric æther has been given, and even ardent spirits are sometimes administered with partial relief, as the heat and vascular action subside.

Warm clysters made of mucilaginous and aromatic vegetables

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* 3. ℞ Hydrargyri Submuriat. gr. ij.—iv.
Opii, gr. ss.
Confect. Rosæ, q. s. M.
ft. Pilula, 4tis horis repetenda.

* 3. Take Submuriate of Mercury, from two to four grains.
Opium, half a grain.
Confection of Roses, a sufficiency to form a Pill, which is to be repeated every four hours.

infused in boiling water, with an addition of sixty or eighty drops of the tincture of opium, have been attended with the most immediate and sensible benefit in cases where vomiting, oppression about the præcordia, and great irritability appeared to be owing to exhaustion from too copious depletion.

In cases of great irritability of the stomach, where excessive vomiting prevails, the early application of a blister immediately over the part may be attended with the best effect; but this remedy is in general applied too late, and a determination to that important organ is suffered to take place before any attempt is made to counteract it, which at last proves too powerful to be removed.

In some instances the vomiting has been known to cease upon the application of a large poultice of mustard-flour to the stomach and feet, which occasioned a very extensive and painful inflammation of the skin.

By employing cold affusion on the first onset of typhus icterodes, we may, probably, in some instances, arrest its progress, and interrupt the morbid actions; and even in cases of some days' continuance we shall be able, by means of it, to abstract heat, induce sleep, and recruit the animal powers. In an advanced stage, it will be best to substitute aspersion, or ablution with a wet sponge. In all cases where there may be the smallest danger of arresting the movements of life by either affusion or aspersion, a glass of wine, or some other more powerful cordial, should be taken immediately after using the remedy.

Cold water is certainly a very efficacious remedy in this fever, and when applied externally, affords very great relief to the feelings of the patient, who is frequently distressed with a sensation of burning heat; the temperature of the skin, at the same time being actually raised some degrees of Fahrenheit's thermometer above the natural standard. It is, however, only when the heat of the body is above the natural standard, that cold water should be applied externally; and the period of its application and the frequency of its repetition must be determined by the feelings of the patient; for should he become chilled by it, much mischief might ensue. To avoid any fatigue to the sick, which the usual mode of applying this remedy is apt to induce, a late writer* on this fever recommends as a useful substitute, that the patient should be covered as he lies in bed with a single sheet wetted with cold water, which by evaporation will gradually reduce the temperature of his body to a proper standard.

Dr. M'Lean has seen the best effects to arise from cold affusion in this fever, and tells us that, in order to heighten its power, he often premised the warm bath; and while the patient was sitting in it, he dashed two or three buckets of cold water suddenly on him. In those cases where the remedy was happily applied, the

* See Dr. Bancroft's Essay on the Yellow Fever.

general effects observed from it were, an improved recollection, greater cheerfulness of aspect, a diminution of heat and anxiety, the pulse becoming more full and equable, a tendency to sleep, and sometimes a distinct remission.

Some communications of Dr. O'Leary, through the medium of the London Medical Journal*, further establish the good effects of the affusion of cold water in typhus icterodes. We are told by him, that he was ordered, soon after his arrival at Barbadoes from Europe, to attend the sick of the 70th regiment at Antigua, where on his arrival, he found they amounted to about a hundred. They were chiefly affected with the yellow fever, and the mortality had been very great; but on his employing cold affusion judiciously, agreeably to the rules advised by Dr. Currie (see Typhus Mitior and Gravior), very few died afterwards. He mentions, that so sensible were the men of its efficacy being superior to any other remedy, and of the relief obtained from it, that in his absence they frequently entreated the officers, when duty led them to visit the hospital, to have it repeated on them.

In a short history of the yellow fever which prevailed at Norfolk in America, and communicated by Drs. Selden and Whitehead to Dr. Miller of New York,† further testimony in favour of an early use of the cold affusion is produced. From the great benefit which these physicians experienced in their two or three first trials of it, they proceeded to recommend it afterwards with confidence. They have reported, that of all those patients to whom they had an opportunity of exhibiting this remedy on or before the second day of the attack, they had the good fortune not to lose one; but after this period, when the fever had begun to subside, without symptoms of amendment, the affusion of cold water seemed to hasten the fatal catastrophe. In no instance did they employ the remedy in question without the exhibition of calomel at the same time. No disagreeable effect was produced by combining the use of calomel with the affusion of cold water; nor did the mercury occasion a salivation in a single instance, although the discharge from the bowels was scarcely as great as when it was used alone in the cure of the disease.

In temperate and cold climates, where we employ affusion, it will be sufficient to take the water fresh from the spring, pump, or the sea: but in warm climates, in order to command the full and expected effect, it will be necessary that its temperature be reduced to a low degree (as about 40 of Fahrenheit's thermometer), by exposing it to the night air previously, or by adding some salt to it.

Much benefit will probably be derived from cold water taken internally as drink: small quantities of which, frequently repeated, have been observed to moderate the excessive heat of the body, as

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* See vol. xvi. page 490.

† See vol. x. page 266. Med. and Phys. Journal.

well as the violence of general febrile action and thirst: it is likewise efficacious in disposing the skin to perspire gently, and in preventing inflammation and irritation of the stomach.

For reducing the temperature of the body to its natural and healthy standard, and for producing a refrigerant effect in this and other fevers of the typhoid type, we have been informed by Dr. Cumming,* that he has derived the highest benefits from either sprinkling or sponging the bodies of the sick with ardent or rectified spirits, and that he considers these to be in every respect superior to cold water. The effect, no doubt, will be quicker from using spirit, as the evaporation will be more rapid; but it has been questioned, and very properly, whether or not the great advantages which are derived from the cold affusion or washings, are to be attributed solely to the abstraction of heat in fever.

Should proper means not have been adopted sufficiently early, or should they have failed in procuring the desired effect, and symptoms of putrefaction have made their appearance, our endeavours must be directed towards stopping the putrid disposition of the fluids by the most powerful antiseptics. West India practitioners have of late administered the capsicum, in the form of pills, as a stimulant, and with very good effect. Spirituous baths have likewise been employed. The cinchona bark must be given in as large doses as the stomach will bear; and if it will not retain any quantity, either in substance, decoction, or infusion, it may then be given in the form of clyster. A pint of decoction, made by boiling an ounce of the powder in a quart of water, until one half is evaporated, may be injected every three or four hours. Acid fruits may likewise be given liberally; and the ordinary drink should be wine, sufficiently diluted with water and acidulated with lemon or orange juice.

The mineral acids might likewise be serviceable in this fever, as well as in typhus gravior and scarlatina anginosa, and I much wish that a fair trial may be made of them, but more particularly the muriatic, in an early state of the disease. The sooner it is administered, the more likely will it be to prove efficacious. Its wonderful effects in other malignant disorders I have often witnessed; and typhus icterodes being evidently of this nature, is it not reasonable to suppose that its use might prove highly serviceable in this also?

Throughout the whole course of the disease, but more particularly under the above circumstances, the strictest attention ought to be paid to cleanliness, by not only changing the patient's linen frequently, and immediately removing and emptying whatever comes from him, but likewise by sprinkling his chamber every now and then with warm vinegar, and allowing a perfect and free ventilation of air through it. To destroy contagion, and

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* See Med. and Phys. Journal, vol. xviii. p. 197.

assist in correcting the fetor, the gaseous fumigations recommended under the head of Typhus Gravior ought to be employed.

The patient's strength is to be supported throughout the disease with preparations of barley, sago, tapioca, Indian arrow root, &c., mixed with wine; and his thirst allayed by a liberal use of barley water, common water, or any other grateful beverage.

Dr. M'Lean observes, that he always found opium to be injurious in the beginning of this fever, although restless nights and anxiety often tempted him to prescribe it in large doses. It procured no settled rest: for a time, the delirium was increased, to which stupor rather than sleep succeeded: and the next day, languor, irritability, and weakness prevailed. When remissions had commenced, and where a return was apprehended, he gave opium freely, and apparently with a good effect. It was likewise useful when convulsions took place, and to procure sleep towards the decline of the disease.

When a severe headach, with great depression of spirits, is complained of, camphor and æther may probably be administered with some advantage. In cases where violent delirium prevails, the application of a blister to the neck or shoulders may be advisable; but where there is only coma, this remedy will not be necessary.

When remissions are obtained, and the disease shows a disposition to yield, the cinchona bark, joined with sulphuric acid, may be taken with advantage; and its use should be continued during the whole stage of convalescence, which is often tedious and long, owing to the great debility that is always left behind, and from which the patient cannot readily recover, unless by a change of climate.

Quassia in a cold infusion is a valuable medicine during convalescence, and here the cold bath may also be serviceable.

The cortex cuspariæ has likewise been found a useful medicine towards the close of this fever, when debility is the chief symptom. An infusion of it* sits easy on the stomach, and is attended with the most beneficial effects in restoring the strength and appetite. Other tonics may be used at the same time: for these, see Dyspepsia.

In recommending a use of the cortex cuspariæ, it appears worthy of observation to guard practitioners against a spurious species of it met with in the trade, and which proves of a deleterious and poisonous quality. That of a safe nature, and commonly used, is a thin smooth bark, of a yellowish colour in the fracture, and of a bitter aromatic taste. The poisonous kind is

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* 4. ℞ Infus. Cuspariæ, f. ℥v.
Tinct. Cinchon. f.
—— Calumb. f. āā ℥ss. M.
Capiat Cochl. magna ij. ter quaterve in die, cum Acid. Sulph. Dilut. ℥ xvi.

* 4. Take Infusion of Angustura Bark, five ounces.
Tincture of Peruvian ditto,
—— of Calumba, each half an ounce. Mix them.
The dose may be two table-spoonfuls three or four times a day, adding about twenty-four drops of Diluted Sulphuric Acid.

less thick, a white, or yellowish white bark; in the fracture gray, on the inner edge yellowish, partly approaching to brown, of an unpleasant bitter taste, and hardly possessing any aroma. The effects of the spurious and bitter cusparia, both on mankind and animals, are pretty much the same as those produced by the nux vomica.

Some years back, a fever of a highly malignant nature made its appearance at Gibraltar, as well as at Cadiz and Malaga, and destroyed some thousands of the inhabitants. By some practitioners it was supposed highly contagious,* by others again not so. Thus it appears that the same diversity of opinion prevailed on this head with respect to this disease, as with regard to the yellow fever, which indeed it very nearly resembles, and probably is the same. That which has been denominated the Bulam fever, is also nearly allied.† This seems to be merely the bilious continued, or bilious remittent, of warm climates.‡

It appears by the practice and writings of the most eminent physicians who have witnessed the Gibraltar, and other parts of the Mediterranean, fever, that the leading remedies were bloodletting, and purging by the submuriate of mercury and antimony; for upon opening many bodies after death, the brain as well as the abdominal viscera presented appearances demonstrative of a turgescence of the vessels of the former, and an inflamed state of some of the latter. In many, the stomach contained a dark or black slimy fluid, closely adhering to the internal coat.

Where the disease breaks out in a garrison, the healthy should immediately be separated from the sick, and, if possible, be encamped at a considerable distance. Subjecting the former to cold ablution daily might possibly enable them to resist the powers of contagion the better; for that it is of a highly contagious nature, I am perfectly convinced. In the apartments of the sick, fumigation (as advised under the head of Typhus Gravior) should be adopted. An attention to these, and other precautionary means, may be attended with the most happy effects: a neglect of them, with ruinous calamity and devastation, as was unfortunately experienced at Gibraltar on the first appearance of the disease.

Mr. Jackson, in his account of the empire of Morocco, states it as his opinion, that the epidemic fever which made its appearance at Cadiz, and afterwards spread all along the southern shores of Spain, was really the plague, imported from the Barbary states, and suffering, after its passage to a Christian country, some variation, originating from the different modes of living, and other circumstances.

Having pointed out the most approved method of treating the yellow fever, it seems advisable to offer a few hints, by an attention

* See Reports of the Pestilential Disorder of Andalusia, Cadiz, and Gibraltar, by Sir James Fellowes.

† See Observations upon the Bulam Fever, by Dr. Pym.

‡ See Dr. Bancroft's Sequel to his Essay on Yellow Fever.

to which Europeans may often be enabled to withstand its attack; or, if seized, to go through it with the least danger. The plethoric and robust being the subjects most liable to this malignant disease, all such, on their approach to the warm latitudes, ought to be bled in proportion to their strength; but should this have been neglected during the voyage, it may be done immediately on their arrival on shore. It will easily be understood here, that bleeding, as a preparative, will have a very different effect from what it would have in a curative intention; for in the former, it prevents morbid action, and gives time for assimilation; whereas, in the latter, it may induce debility and morbid associations, very dangerous to life.

After bleeding, if the patient is of a full and plethoric habit, the bowels are to be opened by some cooling purgative; and if he is naturally of a bilious habit, it may be advisable to premise a gentle emetic. Having adopted these steps, he may then begin a slight course of mercury, taking from two to four grains of hydrargyri submurias, according to his age and other circumstances, every other night, either in the form of a pill, or that of a powder, mixed in some thick vehicle, until the gums become somewhat affected. Should the medicine run through the bowels, a grain of opium, or a few drops of tinctura opii, may be added to each dose. When the mouth shows the mercurial action, a dose of some cooling laxative ought to be administered after one or two days' intermission of the medicine. In some constitutions, not easily affected by mercury, it will be necessary to persevere with steadiness, until the system be thoroughly impregnated; for thereon depends the safety of the patient.

On his voyage being completed, and his landing, he must observe the greatest temperance in his diet, and carefully guard against any exposure to the sun in the middle of the day, and to the cool air of the night, until he becomes somewhat habituated to the climate. The effects of temperance, as a prophylactic, are strikingly demonstrated by Dr. Chisholme, who observes, that while the yellow fever raged at the island of Grenada, the utility of this was remarkably illustrated by the almost total exemption of the French inhabitants from the disease, whose mode of living, compared with that of the English, is temperate and regular in an uncommon degree.

Dr. Clarke tells us, that new settlers who could be prevailed upon to undergo a gentle course of mercury, taking a few laxative medicines, afterwards confining themselves to a moderate use of wine, and living chiefly on vegetables and fruits for the first two or three months, may rely almost to a certainty on escaping this fever. The remark is, I think, well founded, excepting that, notwithstanding all these precautions, it may arise from contagion; and in this case its virulence, in all probability, will be greatly diminished.

Europeans appear to suffer in point of priority and severity of

attack by the yellow fever, precisely in the degree that they possess bodily vigour, rigidity of fibre, and are of a sanguineous temperament; and when relaxed by a long residence, or other causes, they become, like the creoles and people of colour (as they are termed,) in a great degree exempt from the influence of this fever. It is the reduction of tone, which a certain period of residence occasions in the constitution of Europeans, that secures them in a great measure from the seizure of the yellow fever. It is a corresponding (atonic) state of constitution which affords immunity to the native inhabitant.

Having pointed out the means for enabling Europeans to withstand an attack of this fever, I proceed to offer, from personal experience, a few admonitions or rules, by an assiduous attention to which they probably may be enabled to enjoy a long and uninterrupted state of good health in warm climates, unassailed by any disease whatever. Men who exchange their native for a distant climate, may be considered in a light somewhat analogous to that of plants removed into a foreign soil, where the utmost care and attention are required to inure them to their new situation, and keep them healthy.

Every European, in changing his own climate for a warm one, should, if possible, avoid arriving at his new situation during the rainy season of the year. This, with some small variation, commences in the West Indies about the month of August, and terminates in October. If he has it in his power to choose the place of his residence, he ought to prefer that situation which is somewhat elevated, dry, open to the air and sun, and remote from woods, stagnant waters, or marshy grounds. Most of the towns in the West India islands, as likewise the factories on the coast of Africa, with some of our settlements in the East Indies, are, for the convenience of trade, situated on low grounds, either contiguous to the sea, or on the banks of some large river. Swamps and marshes, therefore, exist in their neighbourhood; and when acted upon by a powerful sun, particularly after heavy rains, they send forth noxious vapours and exhalations, which prove a never-failing source of intermittent and remittent fevers, fluxes, &c., to all descriptions of inhabitants, but more particularly to Europeans lately arrived.

Persons of this description ought, therefore, to pass as little of their time as possible in such a situation; and, where obliged by business to resort there by day, they should retire early in the evening to one that is elevated, and that has the advantages before described. If no such situation is to be procured without great inconvenience, sleeping on board a vessel in an open road or healthy harbour, will then be preferable to passing the night on shore. Where unfavourable circumstances do not admit of either of these advantages, and new-comers are obliged to remain constantly in an unhealthy spot, they will act prudently in adopting such means as will tend in some measure to lessen the danger to

which they are exposed. The highest apartment in the house should be chosen to sleep in; if furnished with a stove, a small fire should be kept in it; and the windows that front the swampy ground, if the house is to the leeward of this, are to be kept shut, admitting the light and air by the others. About half an ounce of the compound tincture of bark may be taken every morning on an empty stomach, repeating the dose again in the evening.—Smoking tobacco might also be serviceable in such a situation. A propensity to smoking is, however, too general among Europeans and natives, in tropical climates; yet it ought to be considered not only as a degrading but an injurious habit, as, during the process, the grog glass is in constant circulation. In particular places, where marshy or other deleterious exhalations abound, or during very moist damp weather, at certain seasons of the year, it may be useful and allowable.

The diet of Europeans, newly arrived in a warm climate, should consist of a greater proportion of vegetable food than of animal, avoiding such articles of the latter as are either salted or very highly seasoned. To all such, a free use of ripe subacid fruits will be highly proper, as they will not only assuage thirst, but serve to correct any tendency in the fluids to putrefaction. In the West Indies it is usual to take weak punch in the forenoon daily: sherbet, or an infusion of preserved tamarinds, in water, will be found, however, a grateful and more salutary beverage to allay thirst. The danger of drinking cold liquors of any kind when the body is much heated by exercise, and the perspiration profuse, cannot but be obvious to every person.

The unbounded hospitality of the islanders in the West Indies frequently proves a source of much evil and danger to new-comers; for they are no sooner arrived, than they are engaged by invitation in a daily round of visiting and feasting, committing therein excesses, which, together with an unavoidable exposure to the dews of the evening, are not unfrequently productive of a severe attack of illness. To all new settlers I beg leave, therefore, to recommend a very moderate indulgence in the delicacies of the table; a spare and temperate use of all kinds of vinous and spirituous liquors, giving wine the preference to spirits; a proper self-command in sensual gratifications; the carefully avoiding any exposure to a current of air, or moisture, particularly when the body is heated by exercise; their avoiding this in the heat of the day, taking it early in the morning and cool of the evening; their return early to their respective homes so as to avoid the night-dews; their refraining from dancing and such other active amusements; and their cautiously obviating a costive habit, by taking from time to time some gentle cooling laxative, until they are able to establish a proper regularity in this point, by visiting the temple of Cloacina at certain hours every day, and soliciting natural evacuations.

The custom of going early to bed, and rising betimes in the morning, is conducive to health every where, but more especially

so in hot countries. If gentle exercise, either on foot or horseback, be added in the morning, it will prove highly salutary; and should cold bathing be first used, the body would thereby be much invigorated, and rendered less susceptible of external impressions. Where the convenience of a proper bath is not to be procured, water properly cooled, by having been exposed all night to the air in pots, or a tub, may be thrown over the body. Minor ablutions, at other periods in the day, may also have a good effect. Cold bathing is one of the most powerful means we possess for counteracting the injurious influence of a hot climate, and it connects the most grateful sensations with the most salutary effects, but it should be used in the mornings. The practice would, however, be injurious to those who labour under any visceral derangement: for such, a slight tepid bath may be substituted with advantage.

The dress of new-comers should consist of coats made of thin woollen cloth, with waistcoats and breeches of dimity or nankeen, and they should clothe in proportion to the exposure. What is worn next to the skin should be made of cotton in preference to linen, as this last, when moistened with perspiration in consequence of any severe exercise, is very apt to convey a sense of chilliness when the body becomes inactive again. Calico shirts will, therefore, be preferable to linen ones. Those who are afflicted with rheumatic pains may substitute a waistcoat of thin flannel next to the skin. New settlers should observe the greatest precaution in changing their clothes, of every kind, as soon as possible after getting wet; a circumstance too frequently made light of and neglected, and which often, therefore, proves the cause of an attack of some severe disease.

In a few words, the preservation of the health of Europeans in tropical climates will very much depend on avoiding the various predisposing and exciting causes of disease, until the physical sensibility of the system is reduced by habit to the climate.

Wherever the nature of military service unfortunately requires troops to be stationed near a marsh or jungle, as sometimes is the case in the West and East Indies, healthier spots should, if possible, be selected, and suitable buildings erected, for the reception of the sick, who should be removed there as soon as the precursory symptoms of disease appear. It sometimes happens, however, that in districts remarkable for insalubrity to a considerable extent, no healthy spot can be found; but probably even the most unhealthy may be converted into one of comparative salubrity, by the draining of low marshy grounds, and the destruction of jungle.

The rules to be observed for preserving the health of seamen in warm climates, as well as in cold ones, are inserted under the head of Scurvy.

ORDER II.

PHLEGMASIÆ, OR INFLAMMATIONS.

THE character of this order of diseases is synocha fever, with inflammation or topical pain; the function of an internal part being at the same time injured; the blood upon venesection exhibiting a buffy surface.

Before I proceed to speak of the different inflammatory diseases to which the human frame is liable, it seems proper to make a few observations on inflammation in general; as likewise to point out the different species of it which are to be met with in practice, and the constitution most liable to be attacked.

Certain constitutions are much predisposed to inflammatory diseases, such as where there evidently exists an inflammatory diathesis: here there prevails a healthy appearance, the countenance is ruddy, and the muscular fibres firm, the individual being capable of great exertion, and of continuing it for a length of time without intermission. Moreover in this constitution, the powers of the system, however much exhausted by exercise, are quickly renovated by food and rest, even in a moderate quantity, and is further characterized by the equally diffused action which occurs when a stimulus is taken, no one part being more excited than the others. If by any accident local inflammation is induced, it often terminates rapidly in healthy suppuration.

In every inflammation there is an increased action of the blood-vessels, propelling forward a greater quantity of blood than usual into the part affected, by which means its sensibility and irritability are increased, its vessels distended beyond their natural tone, and the circulation of blood through them rendered more rapid.

A variety of opinions have, however, been entertained with respect to the nature of inflammation. Hoffman, and Dr. Cullen, supposed the proximate cause to consist in an increased action of the blood-vessels, with a spasmodic stricture of their extremities; but as the beginning veins are in a state of over-distention in an inflamed part, as well as the arteries, it is evident that no such spasmodic stricture can exist. Dr. M'Bride's hypothesis on the nature of inflammation is, that, besides the action of the blood-vessels being increased, the resistance to the course of the blood is diminished; and a third doctrine has lately been advanced, which teaches, that instead of an increase of action in the vessels of the part, as is commonly supposed, the direct contrary takes place, and that there is a deficiency of action and paralysis of the vessels affected, instead of spasm. The principal argument in favour of this hypothesis is drawn by its founder, Mr. Latta,* from the swelling of the

* See his System of Surgery.

inflamed part, which he attributes to a partial stagnation of blood; but the great heat of the part, the throbbing pain, and, in many cases, the accelerated action of the whole sanguiferous system, clearly point out an increase of action in the vessels.

When the inflammation is confined to one particular part, without producing any general affection in the system, it is called local or topical; but when it produces effects on the whole system, it is known by the name of general inflammation.

Inflammation is properly of two kinds; viz. the phlegmonous and erysipelatous. By the phlegmonous is to be understood an inflammatory circumscribed affection of the skin and cellular membrane, with a swelling rather prominent in the centre, and of a bright red colour, attended with pain and distention, and in which any effusion that happens to take place is usually converted into pus. By the erysipelatous is implied an inflammatory affection confined principally to the skin when seated outwardly, and to the mucous membrane when internally, with hardly any evident swelling, being of a mixed red colour, readily disappearing upon pressure, but quickly returning again, the redness being of no regular circumscription, but spreading unequally, with a pain like to that of burning, which gives rise to a number of small blisters, and terminating usually in a desquamation of the scarf-skin, and now and then in gangrene, but never in a suppuration, unless combined with phlegmon. Such a combination does frequently occur in practice, constituting what has been denominated erysipelas phlegmonodes.

Besides the differences in the circumstances of these two kinds of inflammation, there is another very evident one, which is, that a phlegmon, when considerable, is generally accompanied with more or less of the symptoms of general inflammation; whereas, erysipelas is usually attended with symptoms of irritation when perfectly pure; from which circumstance it will be necessary to adopt a different mode of treatment in each of them.

Of the erysipelas there are two cases: one, when it is merely an affection of the skin alone, with very little of the whole system, which is called erythema; the other, when it is an affection of the system, and this is named erysipelas.

Persons in the prime of life, and in full health and vigour, and of a plethoric habit of body, are most liable to the attacks of phlegmonous inflammation: whereas those advanced in years, and those of a weak, irritable, and spare habit, are most apt to be attacked with erysipelatous or erythematic inflammation.

The more moderate the different symptoms are, the better is the chance of the inflammation terminating by resolution. When it does not readily yield to proper remedies, and is unusually obstinate, or deep-seated, there is reason to believe that it will terminate by suppuration. When the symptoms are very violent, especially if the inflammation is of the erythematic kind, there will be reason to fear gangrene.

Resolution is always a favourable termination: suppuration is also favourable if the inflammation be external and the habit good; but in internal inflammation we shall find it is generally to be dreaded. Internal gangrene is always fatal. It is only when the gangrene is external that medicine can avail, and then it often fails.

PHLEGMON.

This species of inflammation is occasioned by the application of stimulants, such as fire or burning; by external injuries, either bruising, wounding, over-stretching, or compressing the parts; by extraneous substances which have lodged, and either by their form, bulk, or quality, produce irritation; by the application of cold; and by any thing that determines an increased impetus of blood to the part.

The chief seat of phlegmonous inflammation is the inner surface of the true skin and the cellular substance contiguous to it, from which it extends to the adjoining parts of the cellular membrane and skin; so that the surface soon assumes a florid colour, the tumour, at the same time, extending both in depth and circumference. It comes on with an itching, dryness, redness, and increased heat and circulation in the affected part; which symptoms are shortly succeeded by a circumscribed tumour, through which shooting and throbbing pains extend. If the inflammation runs high, and is of considerable extent, then an increased action of the heart and arteries takes place; the pulse becomes full, hard, and quick; the skin dry and hot; great thirst arises, and a feverish disposition ensues.

Phlegmonous inflammation usually terminates either by resolution, suppuration, effusion and adhesion, or gangrene. By resolution we are to understand the natural cure or going off of the inflammation by a gradual cessation of all the symptoms, the state and texture of the part remaining entire. By suppuration is implied the conversion into matter, or pus, of the serum, or coagulable lymph and blood which have been effused in the adjoining cellular substance, in consequence of which a cavity, termed an abscess, is formed. When effusion takes place without terminating in suppuration, the matter exuded is frequently viscid, and unites the neighbouring parts together often in twenty-four or thirty hours. In some cases this takes place from a slow degree of inflammation, such as is not noticed at the time: hence, on opening bodies, adhesions between the pleura and lungs, or among the abdominal viscera, are often found. By gangrene is meant a mortification not yet actually formed, but approaching, being the intermediate state between the height of inflammation and sphacelus. Sphacelation implies the total loss of life in the part, an absolute derangement of its structure, the abolition of all its functions, and an utter incapacity of its being restored to any service

in the animal economy. Many of the phenomena of gangrene seem to depend on a great violence in the action of the vessels, followed by a relaxation, or loss of tone in them; this, in many cases, being so complete, that the action cannot be restored, which occasions the part to become perfectly dead, or sphacelated.

Such are the most common terminations of this species of inflammation; but in the schools a fourth has been noticed, which is in a scirrhus, implying an indolent, knotty hardness of the part, unattended by any discoloration, but accompanied with lancinating pains, the tumour after a time ulcerating and becoming cancerous. This termination of inflammation is, however, confined to glandular parts.

When the patient is seized with reiterated shiverings; when the fever and inflammatory appearance cease quickly without any perceptible reason; when a heavy, cold, and dull uneasiness is experienced in the part affected, instead of acute pain; when the most elevated portion of the tumour appears soft and white, while the rest has its redness increased; and when, at the same time, the surgeon can feel the fluctuation of a fluid, we may be assured that a termination in suppuration has ensued. The latter symptom, however, occurs only where the matter lies superficially: but a man endued with great nicety of touch may be able, in many cases, to perceive the undulations of matter, even when deeply lodged. In most instances, indeed, of this nature, the quick subsidence of all the inflammatory symptoms, the repeated rigors, and the sense of weight and coldness in the part, are the only obvious appearances; but the patient being afterwards attacked with emaciation, nocturnal sweats, and other hectic signs, very clearly point out that there is a hidden collection of matter.

The symptoms which denote the termination of inflammation in incipient mortification are; first, a sudden diminution of the pain and sympathetic fever: secondly, a livid discoloration of the part, and which, from being yellowish, becomes of a green hue: thirdly, a detachment of the cuticle, under which a turbid fluid is effused: and fourthly, the swelling, tension, and hardness subsiding, while, at the same time, a crepitus is perceived on touching the part, owing to a generation of air in the cellular membrane. The term gangrene has been applied to the disease in this stage; but when the part has become black and fibrous, and destitute of natural heat, sensation, and motion, it is denominated sphacelus.

In phlegmon, our prognostic should be drawn from the symptoms which are present, as well as from the seat of the inflammation. If the inflammatory appearances cease suddenly, and blisters, discharging a thin ichorous matter, arise, together with the part affected losing its sensibility and becoming of a livid colour, then a gangrene will certainly ensue. On the contrary, a gradual abatement of the inflammatory symptoms by a termination, either in resolution, or a suppuration where proper pus is

formed, may be regarded as prognosticating a favourable event. This remark holds good, however, only with respect to external suppurations, as internal ones are always dangerous, and not unfrequently fatal.

In the incipient state of a phlegmon, it will always be proper to attempt the cure by procuring a resolution of the tumour, if possible; and, therefore, an early attention should be paid to the removal of the cause which has excited it, as likewise to obviate the phlogistic diathesis, either of the whole system, or of the particular part which is affected.

If the inflammation has proceeded from a lodgement of some extraneous body, such as a bullet discharged from any kind of fire-arms, or has been occasioned by a thorn or splinter of wood, &c., it ought immediately to be removed, and, if necessary, the wound must be dilated to such a size as to admit of its being readily got at.

In cases of local inflammation, the phlogistic diathesis may be obviated by drawing a proper quantity of blood immediately from the neighbourhood of the part affected, either by scarifications with the aid of cupping-glasses, or by the application of several leeches, which will be the preferable way if they can be procured; promoting the flow of blood by linen cloths dipped in warm water, and renewing them as soon as they cool: but in internal inflammations, it will be advisable to draw blood from the system by opening a vein or artery, taking care to proportion the quantity drawn off to the age and strength of the patient, as well as to the severity of the symptoms.

With a view of obviating the phlogistic diathesis, we may likewise have recourse to purgative medicines. In inflammations of any of the external parts of the body, as likewise in those of the head and chest, a frequent use of purgatives will be attended with a good effect; but in a similar affection of the bowels, active purgatives should be administered with due caution. Those of a mild nature, together with emollient laxative clysters, deserve a preference.—See Enteritis.

To assist these means, and terminate the inflammation by resolution, if possible, it will be right to make use of some discutient application, as remedies of this nature are, in some mild cases, of themselves sufficient to disperse an incipient phlegmon. In cases of violent contusion or fracture, where a considerable degree of tension prevails, a poultice of rye-meal, or crumbs of bread, moistened with the liquor plumbi subacetatis, properly diluted with water (viz. about eighty drops of the former to about a pint of the latter), will be a very proper application; and this may be renewed twice or thrice a day, until the swelling or inflammation subside; but in a common phlegmon, or where the part is so tender and painful as not to be able to bear the weight of a poultice, we must be content to apply pieces of soft linen moistened in some sedative

application.* It is to be understood, however, that these remedies are to be applied cold, whether we use poultices or wet pledgets, and that they are to be renewed as often as they become stiff, hard, or warm.

The application of cold is indeed one of the most powerful means which we possess for abstracting heat and subduing inflammation; and it has been carried so far in some instances, that pounded ice and snow have been employed for the purpose. When these are not to be obtained, we may substitute, as a refrigerant, pieces of soft linen moistened in a solution of the nitrate of potass and muriated ammonia in water, or even in simple cold water; but they are to be renewed frequently.

In some cases of phlegmonous inflammation, particularly that which attends compound fractures, swelled testicle, &c., the pain is often so violent as to deprive the patient of his natural rest. When this happens, we may give opiates both with advantage and safety, provided sufficient evacuations have been premised, and that we afterwards obviate the costiveness produced by them with gentle aperients. The dose, however, should be considerable; otherwise opium, instead of proving serviceable, will have a contrary effect. About fifty or sixty drops of tinctura opii may be given to an adult an hour or two before bedtime, and in a like proportion to those of a younger age. Children at the breast may take a small quantity of the syrup. papaveris, instead of the tinct. opii.

When the inflammatory symptoms run so high as to affect the system, it is not unusual for a febrile disposition to prevail. In such cases we may order some febrifuge medicine to be taken every three or four hours, combined with the nitrate of potass.†

If, notwithstanding these means, the tumor should show an evident tendency to suppurate, we are then to accelerate its progress by the application of warm emollient cataplasms, which ought to be renewed three or four times a day. If linseed can be procured, a poultice made of this, slightly bruised and boiled

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* 1. ℞ Liquor. Ammon. Acetatis,
Aquæ Distillat.
Alcohol. āā f. ℥ij. M.

Vel,

2. ℞ Ammon. Muriat. ℥j.

Acid. Acetic. Dilut. f. ℥ij.
Spirit. Camphoræ, f. ℥j.
Liquor. Plumbi Subacetat. ℥ xvj. M.

ft. Lotio.

† 3. ℞ Potassæ Nitrat. ℥ss.—℥j.

Aq. Fervent. ℥viij.
Antimon. Tartarizat. gr. ij.
Syr. Violæ, ℥ij. M.

* 1. Take Solution of Acetate of Ammonia,
Distilled Water,
Rectified Spirit, each two ounces.
Mix them, and use them as a wash.

Or,

2. Take Muriate of Ammonia, one drachm.
Distilled Vinegar, two ounces.
Camphorated Spirit, one ounce.
Solution of Subacetate of Lead, twenty-four drops.
Mix them for a wash.

† 3. Take Nitrate of Potass, from half a drachm to one drachm.
Hot Water, eight ounces.
Tartarized Antimony, two grains.
Syrup of Violets, two drachms.

up with milk and water, will be preferable, on account of its emollient quality; but when it is not to be obtained, the white bread poultice, with a small addition of oil, may be used: previous, however, to the application of the poultice, the part affected should be well fomented with flannels wrung out of a warm decoction or infusion of emollient herbs*.

In inflammatory tumors, which are slow in suppurating, stimulating poultices, composed of onion, garlic, galbanum, or ceratum resinæ, mixed with the white of an egg, and the common poultice, may possibly forward the suppuration. Warm plasters of galbanum, or pix abictina, applied to slow suppurating tumors, sometimes prove useful; and they have this advantage over poultices, that they do not prevent people from doing their ordinary business.

When the suppuration is completed, and the tumor is become very soft to the touch, and is near the surface, it is to be opened, either with a lancet or a trocar, in the part which is most dependent, taking care to press the matter perfectly out; after which the wound is to be dressed with dry lint, and a pledget spread with the ceratum resinæ to be laid over all. If the wound does not heal readily, the cinchona, with other tonics, should be used till the patient is restored to health. To support the vis vitæ, a full diet, with a moderate allowance of wine, will be requisite.

In very large abscesses, particularly in that of the psoas muscle, it has been found a judicious practice to evacuate the matter by means of a seton, or by a flat trocar in a canula; which is to be insinuated between the skin and cellular membrane for some space, and then to be plunged in a slanting direction down into the abscess, leaving the canula, and withdrawing the trocar. The orifice in the skin, and deep-seated parts, by this means will not be in a direct line, and the severe constitutional symptoms which are apt to arise from the exposure of an extensive

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ft. Mistura, cujus sumat cochl. magna ij. pro dos.

Vel,

4. ℞ Haust. Salin. ℥ jss.

Potassæ Nitrat. gr. x.—xv.

Vini Antimon. Tart. ♏ xij.

Syrup. Simpl. ℥j. M.

ft. Haustus. 3tia quaque hora sumendus.

* 5. ℞ Flor. Anthemidis,
Fol. Althææ, āā ℥ij.

Papav. Somnif. Exsiccat. ℥ij.
Aq. Ferventis, Oiv. M.

Fomentum.

Mix them, and take two table-spoonsful for a dose.

Or,

4. Take Saline Draught, one ounce and a half.
Nitrate of Potass, ten or fifteen grains.
Wine of Tartarized Antimony, eighteen drops.
Common Syrup, one drachm.

Mix them as a draught, to be taken every three hours.

* 5. Take Camomile Flowers,
Marshmallow Leaves, each two ounces.
Poppy Heads, bruised, an ounce.
Boiling Water, two quarts.

Infuse them for a proper time, then pour off the liquor, and use it for fomentation.

cavity to the air, are thereby avoided. In the like cases it will also be proper to direct the patient to take at least an ounce of cinchona bark a day, in order to promote the production of proper pus; and to support his strength under the discharge, a nutritive diet, with a moderate use of wine, should be allowed.

Good pus is of the consistence of cream, and of much the same colour; it has no smell, scarcely any taste, and six parts in seven appear to be water, but it is in general rather heavier than water. In the common heat of the atmosphere it does not unite with this liquid, but does so when exposed to heat. It contains in it some volatile matter, the peculiar properties of which have not been fully explained; when examined by the microscope, it commonly appears to be flaky. Pus, when examined chemically, has the same general properties as the blood.

The matter of an abscess is either absorbed or discharged, but more generally the latter; and in either case, if it is well conditioned, the cavity is gradually filled up by an operation of nature, which is termed granulation, from the new parts appearing in the form of small red grains. When this process goes on favourably, the granulations are of a florid red colour, and proceed in a regular manner till the cavity is accurately filled, its edges (if the matter of the abscess has been discharged externally) being even, or nearly so, with the sound skin.

When the granulation is too languid, it may be forwarded by the same means which promote a favourable secretion of pus. It is, however, sometimes too luxuriant, forming irregular masses, which project beyond the lips of the wound. In such cases, it will be necessary to check the granulating process, and destroy the projecting parts by escharotics; but for more particular information on this head, I must refer to the works on surgery.

It has been customary to treat inflammation, terminating in suppuration, in the manner just detailed; but in the treatment of such abscesses, it has lately been recommended* to approximate the lips of the wound, immediately after the contents of the sac are discharged, by strips of adhesive plaster, then applying a compress, and securing the whole by a roller of sufficient length, applied somewhat tight. The dressings are, at the same time, to be kept constantly moistened with a cold saturnine lotion. By proceeding thus, instead of in the usual way, the external air (if it really be productive of the evil commonly attributed to it) is effectually excluded; adhesion, and obliteration of the sac, will certainly be obtained; the health of the patient will in no wise be injured either by the quantity or quality of the subsequent discharge, as the cutis vera approximates closely; when the cure is effected, there is no waste of cutaneous sub-

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* See Mr. Cunningham's communication in vol. v. p. 272 of the Medico-Chirurgical Journal.

stance, which frequently renders the parts weaker afterwards than they were before; there will be no unseemly or puckered cicatrices, so often observed on the scite of large abscesses; and, finally, instead of the curative process occupying weeks, nay months sometimes, by this plan of treatment the cure is nearly effected in a few days; for when the cavity of the abscess is once obliterated by the adhesion of the investing integuments to the surface below, the cure may be considered as next to being completed, as the lesion then constitutes merely a simple wound.

Should phlegmonous inflammation threaten to terminate in gangrene, or already have shown symptoms denoting such a termination, we are then to stop the progress of the mischief, and promote the speedy separation of the dead parts from the living. To effect this, it was formerly customary to make slight scarifications, and afterwards to apply warm antiseptic fomentations and poultices: but modern practitioners, particularly Mr. Bell and the late Mr. John Hunter, have highly disapproved of this mode of proceeding, and recommend a reliance to be placed on a liberal use of the bark of cinchona, together with a nutritive diet, and such a quantity of wine as will be sufficient to keep up the pulse, and induce the necessary degree of inflammation. To give energy to the system, to restore vitality to the affected parts, and to lessen the morbid irritability in them, are the objects which we should keep in view in all cases of gangrene.

In cases of gangrene, arising from external injury, and exposing the life of the patient to danger, Mons. Larry* strongly advises that amputation should be performed, without waiting the appearance of the line of separation between the living and dead parts.

Where gangrene arises from debility, opium frequently proves useful: and as it by no means counteracts the effects of the cinchona bark, it may be given along with it: indeed opium will prove generally beneficial, and particularly in that variety of the complaint in which no previous inflammation existed, but which is accompanied by violent pain.

The efficacy of the bark of cinchona is in every instance indeed much increased by its junction with opium in these affections, and therefore they cannot be too early employed in the curative plan of treatment, conjoined together.

In cases of gangrene, accompanied with convulsive spasms, or arising from any local injury, such as a fracture, &c., producing irritation, a combination of musk with ammonia has been found by Mr. White, of Manchester, and other practitioners on his recommendation, to have been attended with a happy effect in

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* See his Mémoires de Chirurgie Militaire.

abating subsultus tendinum, stopping the progress of mortification, and occasioning the dead parts to separate from the living. A bolus, consisting of ten grains of musk, and the same quantity of ammonia, repeated every three hours, is what is advised on such occasions.

Musk, combined with the volatile salt of amber, might probably prove a still more powerful remedy for checking the progress of gangrene arising from any local injury producing irritation.

By modern practitioners we are instructed to keep the parts cool, and that all applications to them ought to be cold instead of warm, as was formerly practised. As an application to parts in a gangrenous state, there can be none better than a poultice made by stirring into an infusion of malt (such as may be readily obtained from the ale or porter brewers) as much oatmeal as is required to make it of a proper thickness, and afterwards adding about a spoonful of yest*. In applying it, due care must be taken not to bind it on too closely, as the fermentation, a short time after its application, will be considerable, and its bulk of course so increased, as to put the cloths and bandages which confine it very much on the stretch.

The cataplasma carbonis (which is prepared by mixing two ounces of wood charcoal, reduced to a very fine power, with half a pound of the common farinaceous poultice) is another application which has lately been much used in gangrenous cases, as well as in sweetening fetid ulcers, and disposing them to granulate favourably.

By some communications through the medium of the Medical and Physical Journal†, we are given to understand that the progress of mortification has been checked, and the offensive stench issuing from the wound entirely removed in a very short space of time, by sprinkling the diseased parts thickly over with the nitrate of potass, pulverized very fine. In the instances alluded to, the dressing was renewed twice or thrice a day.

When the diseased parts separate and slough off, dry lint is to be laid on the wound with a pledget, spread with some digestive ointment, applied over all.

In the second volume of the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, is inserted a paper from Dr. Harness, at that time a physician to the Fleet, on the good effects of the application of the gastric fluid of graminivorous animals to parts in a gangrenous state. By this gentleman we are informed, that he found its application to succeed, in more than a hundred cases of sphacelus, in entirely removing the sloughs, and occasioning healthy granulations.

As a gentle stimulus to parts in a state of gangrene, where any is thought proper, and in preference to warm gums, balsams, or

* This is the Cataplasma Effervescens of the Pharmacopœia Chirurgica, being similar to the Cataplasma Fermenti of the last London Pharmacopœia.

† See vol. xi. p. 206.

rectified spirit, Mr. B. Bell advises* the use of a weak solution of ammonia muriata in vinegar and water. We are informed by him that a drachm of the salt, to two ounces of vinegar and six of water, form a mixture of a proper strength for every purpose of this kind; but the degree of stimulus can be easily either increased or diminished, by using a larger or smaller proportion of the salt.

In similar affections of the toes and feet, Mr. Potts† very much disapproves of all stimulating applications, and in their stead recommends soothing and emollient ones, and this with a view to avoid exciting pain. A case which some time ago came under my inspection has, in my opinion, decidedly established the superiority of the latter mode of treatment over the former. On meeting in consultation the professional gentlemen who had the management of it, I strongly urged the necessity of soothing and emollient applications (the good effects of which I had before witnessed on other similar occasions); and these were adopted for a time with the greatest relief to the sufferings of the patient, as likewise arresting the progress of the mortification. Not happening to call again for three or four days, this prudential mode of proceeding was discontinued by the chief surgeon, and a stimulant one was substituted; to which plan, as a disciple of the old school, he was strongly bigoted.

The consequences were, that the pains, which had before been much alleviated, became highly aggravated; and the mortification, which had been arrested in its progress, spread so considerably as to threaten the greatest danger. Being now thoroughly convinced of his error, he was glad once more to have recourse to the soothing and emollient plan; by a strict pursuance of which, by administering opium to the amount of six or eight grains a day, so as to keep up a constant effect; by allowing a liberal use of wine; and by giving the cinchona bark in substance, in the quantity of about an ounce a day, joined with camphor (which combination seems to possess strong antiseptic powers), the patient appeared for many weeks to have a great chance of recovering. The prospect, however, proved delusive; for he soon afterwards paid the debt of nature. From his having been withdrawn from under my care during the last six weeks, I cannot speak as to the mode of treatment which was latterly pursued.

It seems almost superfluous to observe, that it was found necessary to obviate the effect of the opium on the intestines by a frequent use of some mild laxative or emollient clyster, so as to procure one or two evacuations daily. In the early stage of the disease the cataplasma effervescens was employed, and seemingly with a most happy effect.

In this species of mortification, Mr. Potts reports, he found the cinchona bark had little or no influence, but that opium in large

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* See his System of Surgery, vol. i. p. 112.

† See his Chirurgical Works, pp. 799 and 800.

doses, frequently repeated, proved an effectual remedy in many cases. To give the patient every possible chance of recovering, it will be best, I think, to administer both.

It sometimes happens, particularly in military hospitals, when the wards are much crowded, and the air contaminated to a high degree with putrid miasma, that sudden and rapid mortification is apt to attack all the wounded who are lodged in such wards, and that several individuals die, notwithstanding the application of the curative means and treatment successfully resorted to in the other species of gangrene. The term hospital gangrene has, therefore, been applied to this species of the disease.

It seldom falls under the observation of practitioners in civil life; it occurs most commonly amongst the wounded after an engagement, particularly when many are crowded together. When it supervenes upon a wound, its progress to a fatal termination is rapid, and all structures suffer from it.

By an examination of its symptoms, it would appear that this gangrene is the effect of a general state of the system, which produces a local affection on wounds or ulcers; an affection which, after having passed through different stages or periods, degenerates into mortification or gangrene, assuming all the symptoms of slow fever, and terminating very frequently by destroying the life of the patient.

In most cases there is reason to suppose the contagion is spread through the atmosphere, and that the miasma, most probably, are applied immediately to the wound or ulcer; but there are some grounds, at the same time, for believing that hospital gangrene may also be produced by the inspiration of the deleterious matter. All who have described the disease, say, that it is communicable by the pus of ulcers which are affected with it, and particularly by whatever may be impregnated by this pus, such as lint, linen, matresses, sheets, blankets, &c.; and it has been thought by some of the German and French surgeons, as well as a few of the English ones, that the usual washing and bleaching of linen is not sufficient to annihilate the power of the contagious matter, as lint made from the old sheets of hospitals wherein this species of gangrene had existed, was found to give rise to the disease among those labouring under recent wounds or ulcers in other establishments wholly free from it.

During the late war this malady very frequently made its appearance in the French hospitals; and in the treatment of it, we are informed by Mr. Cross,* that no reliance whatever was placed by the surgeons upon internal remedies, although acknowledged to be a constitutional and contagious affection. He states, that the topical application of vegetable and diluted mineral acids was found by them to prove successful in mild cases, and in a few instances carbon; but that the actual cautery alone proved capable of

* See his Sketches of the Medical Schools of Paris.

arresting the fatal progress of the more unfavourable. The iron is applied red hot by the French surgeons, so as to produce an eschar on every point of the surface of the sore.

We are informed by Mr. Blackadder* that he experienced the progress of the disease to be completely arrested by keeping the sores constantly wet with the liquor arsenicalis diluted with an equal quantity of water, by means of lint dipped therein; and with suitable topical applications the wounds soon get well without paying any attention to the constitutional affection, which quickly disappeared of itself. To detach the slough, he says, it must be dressed with a detergent ointment, and be frequently washed with a solution of potass. On the detachment of this, the wound becomes a simple ulcer, and is to be treated accordingly. No instance occurred in the practice of this gentleman during the time he was resident officer of a division hospital in Spain, in which this method of cure failed of success, when timely and properly employed. It appears also, that it was afterwards adopted in the hospitals of Belgium with the same results. Mr. Blackadder mentions, that the prejudices of the times are against the use of the actual cautery.

In all cases of hospital gangrene, the strictest attention should be paid to cleanliness, and a free and perfect ventilation. The wounded patients, and those labouring under common ulcers, should be kept apart, and the wards of the hospital containing such patients be made to undergo frequent fumigations, as advised under the head of Typhus. Cinchona, in conjunction with the mineral acids, may be considered as appropriate medicines.

Carbuncle (Anthrax) is an inflammatory tumour which seldom suppurates perfectly, but discharges a thin acrid humour, as is usual in erysipelatous inflammation, and exhibits symptoms of approaching sphacelus. A generous diet, with a liberal use of wine and bark, in combination with snake-root, together with opiates to alleviate pain and procure rest, will be the best internal remedies in this complaint; warm fomentations with bruised poppy heads, with an addition of a little rectified spirit, and a cataplasm of bark and yest over the whole tumour, (which ought to be renewed every four hours,) are the best external applications we can employ.

The termination of inflammation in a scirrhus is (as was before observed) confined to glands. Upon a gland becoming scirrhous, we should disperse it, if possible; and if we cannot effect this, then we should endeavour to keep it stationary, and prevent its ulcerating and degenerating into a cancer. The means best calculated to answer these intentions are pointed out under the particular heads of Scirrhus and Cancer.

If the tumour, on a fair trial of these means, should not disperse, but, on the contrary, show an evident tendency to ulcerate, and degenerate into a cancer, then, in my opinion, the sooner it is ex-

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* See his Observations on Phagedæna Gangrænosa.

tirpated, the better will it be for the patient; as it is more than probable that the affection is not originally connected with the system, but is merely local, and that the constitution or habit does not become tainted until ulceration takes place.

ERYSIPELAS.

This disease is an inflammatory affection, accompanied usually with drowsiness, often however with delirium, when the face is affected, and with a fever of a few days' continuance.

When the inflammation is principally confined to the skin, and is unattended by any affection of the system, it is called Erythema; but when the system is affected it is named Erysipelas.*

It sometimes happens that the inflammation extends to the cellular membrane beneath the skin, whence a real phlegmon and collection of matter become joined to the erysipelas, which combination has been denominated erysipelas phlegmonodes; but this is mostly the case where there has been a previous scratch or injury of the skin.

Every part of the body is equally liable to erysipelatous inflammation, but it more frequently appears on the face, legs, and feet, than any where else, when seated externally; and it occurs oftener in warm climates than phlegmonous inflammation.

Erysipelas does not often attack persons before the age of puberty: it is a disease of advanced life, met with more frequently among women than men, particularly those of a sanguine irritable habit. In many people there seems to exist a predisposition to the disease. Sometimes it returns periodically, attacking patients once or twice in the year, and in some instances much oftener, greatly exhausting the strength thereby.

It is brought on by the several causes that are apt to excite inflammation; such as injuries of all kinds, the external application of stimulant acrid matters to the skin, exposure to cold, particularly during a course of mercury; obstructed perspiration, suppressed evacuations, or other causes inducing plethora; the presence of irritating matter in the primæ viæ, &c.; and it may likewise be occasioned perhaps by a certain matter generated within the body, and thrown out on its surface. A particular state of the atmosphere seems sometimes to render it epidemical, as we often find the scarlatina anginosa, which is a species of internal erysipelas, prevail as such.

It seems connected likewise with that peculiar state of the atmosphere which occurs in hospitals and crowded ships of war, occasioning the slightest wound to produce erythema. By the generality of practitioners, erysipelas has not been considered as

* In Dr. Cullen's nosological arrangement of diseases, erysipelas is placed among the Exanthemata; but I have thought it best not to separate it from Erythema, that the two species may thereby be seen at one view.

a contagious disease; but some cases have occurred in my practice which induce me to think that it is occasionally so, and there are some recorded in a periodical work,* which confirm the supposition.

In slight cases, where it attacks the extremities, it makes its appearance with a roughness, heat, pain, and redness of the skin which becomes pale when the finger is pressed upon it, and again returns to its former colour when it is removed. There prevails likewise a small febrile disposition, and the patient is rather hot and thirsty. If the attack be mild, these symptoms will continue only for a few days, the surface of the part affected will become yellow, the cuticle or scarf-skin will fall off in scales, and no further inconvenience will perhaps be experienced; but if the attack has been severe, and the inflammatory symptoms have run high, then there will ensue pains in the head and back, great heat, thirst, and restlessness; the part affected will slightly swell; the pulse will become small and frequent; and about the fourth day a number of little vesicles, containing a limpid and in some cases a yellowish fluid, will arise. In some instances the fluid is viscid, and instead of running out, as generally happens when the blister is broken, it adheres to and dries upon the skin.

In unfavourable cases these blisters sometimes degenerate into obstinate ulcers, which now and then become gangrenous. This, however, does not happen frequently; for although it is not uncommon for the surface of the skin, and the blistered places, to appear livid or even blackish, yet this usually disappears with the other symptoms of the complaint.

The period at which the vesicles show themselves is very uncertain. The same may be said of the duration of the eruption. In mild cases it often disappears gradually, or is carried off by spontaneous sweating. In some cases it continues without showing any disposition to decline for twelve or fourteen days, or longer.

The trunk of the body is sometimes attacked with erysipelatous inflammation, but less frequently so than the extremities. It is not uncommon, however, for infants to be attacked in this manner a few days after birth; and in these it makes its appearance about the genitals. The inflamed skin is hard, and apparently very painful to the touch. The belly often becomes uniformly tense, and sphacelated spots sometimes are to be observed. From dissections made by Dr. Underwood, it appears, that in this form of the disease the inflammation frequently spreads to the abdominal viscera.—See Infantile Erysipelas.

Another species of erysipelatous inflammation, which most usually attacks the trunk of the body, is that vulgarly known by the name of shingles, being a corruption of the French word *ceingle*, which implies a belt. Instead of appearing a uniform inflamed

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* See Medico-Chirurgical Journal, vol. i. p. 615.

surface, it consists of a number of small pustules, extending round the body a little above the umbilicus, which have vesicles formed on them in a short time. Little or no danger attends this species of erysipelas.

When erysipelas attacks the face, it comes on with chilliness, succeeded by heat, restlessness, thirst, and other febrile symptoms, with a drowsiness or tendency to coma or delirium, and the pulse is very frequent and full. At the end of two or three days a fiery redness appears on some part of the face, and this at length extends to the scalp, and then gradually down the neck, leaving a tumefaction in every part the redness has occupied. The whole face at length becomes turgid, and the eyelids are so much swelled as to deprive the patient of sight. When the redness and swelling have continued for some time, blisters of different sizes, containing a thin colourless acrid liquor, arise on different parts of the face; the skin puts on a livid appearance in the blistered places; but in those not affected with blisters, the cuticle, towards the close of the disease, falls off in scales.

No remission of the fever takes place on the appearance of the inflammation in the face; but, on the contrary, it is increased as the latter extends, and both will continue probably for the space of eight or ten days. In the course of the inflammation, the disposition to coma and delirium is sometimes so increased, as to destroy the patient between the seventh and eleventh days of the disease. When the complaint is mild, and not marked by a fatal event, the inflammation and fever generally cease gradually without any evident crisis.

If the disease arises in a gross habit of body, occupies a part possessed of great sensibility, is accompanied with much inflammation, fever, and delirium, and these occur at an early period, we may suppose the patient is exposed to imminent danger. The fever assuming the typhoid form; the inflammation becoming of a purple colour; its suddenly receding from the surface, and attacking an internal part; livid vesications; great prostration of strength; and a weak, rapid, irregular pulse, are to be viewed in a very unfavourable light. Erysipelas never terminates in suppuration, unless combined with a considerable degree of phlegmonous inflammation, which is however sometimes the case; but in a gross habit, the vesications are apt to sphacelate, in which case there will also be great danger. When the febrile symptoms are mild and unaccompanied by delirium or coma, are not combined with typhus, and the inflammation does not run high, we need not be apprehensive of danger.

Where the disease has occupied the face, and proves fatal, inflammation of the brain and its consequences are to be met with in dissection.

Great diversity of opinion has prevailed among the practitioners in medicine, concerning the mode of treatment to be adopted in

erysipelas; some pursuing the same antiphlogistic plan advised in phlegmonous inflammation; others, again, disapproving of all evacuations, and treating it as a disease dependent on irritability.

To reconcile these jarring opinions, I shall consider the complaint as sometimes combined with phlegmonous inflammation (constituting what has been denominated erysipelas phlegmonodes), as now and then happens, when it arises in a full plethoric habit. In such a case, if the skin is hot and dry, the pulse full, strong, hard, and frequent, and the head affected with severe pain, stupor, or delirium, it will undoubtedly be proper to have recourse to bleeding, cooling purgatives, diaphoretic and refrigerant medicines, and the strict observance of an antiphlogistic regimen, as recommended in phlegmon. Topical bleeding, however, by means of leeches, which proves so useful in other varieties of inflammation, is not admissible in erysipelas; as the orifices by which it is drawn are very apt to become gangrenous, or to degenerate into those troublesome ulcers which the disease, when it terminates in effusion, sometimes produces. When we have occasion, therefore, to draw off blood, in order to counteract the inflammatory diathesis, we must do it by opening a vein; and where the head is the part diseased, the jugular will be the most proper. As to the quantity to be taken away, we are to be regulated in this by the violence of the inflammatory symptoms, the appearance of the blood when allowed to cool, and the strength of the patient. From the excessive vascular action which the brain and the affected parts exhibit when the disease proves fatal by occupying the head, there can be no doubt, in such cases, of the propriety of the depleting plan: blood may be taken freely from the arm, and a constant evaporation from the inflamed parts be kept up by means of alcohol and water. In vigorous habits, the efficacy of this practice must be obvious; but in old or infirm constitutions, or where the disease is perfectly pure or local, does not affect the head, is unaccompanied with symptoms of general inflammation, and has arisen in a weak irritable habit, or is accompanied with a fever of the typhoid kind, bleeding will be improper.

The same observation will likewise apply to the making use of strong purgatives; but although I disapprove of such medicines in the latter instance, still it will be right to keep the body open by gentle saline aperients, so as to procure one or two motions daily. Where the inflammation is of a phlegmonous nature, and the head is much affected, a liberal use of active purgatives will undoubtedly be advisable.

In those cases where the fever and inflammation run high, diaphoretic medicines will be proper, and they may be given conjoined with the nitrate of potass, as advised in phlegmon, or as directed under the head of Inflammatory Fever. As erysipe-

latous fevers often terminate by sweat, mild diaphoretics,* with plentiful dilution, become a necessary part of the treatment, and should never be neglected.

In those cases where the head and face are affected, and coma prevails, the semicupium, together with sinapisms applied to the feet, will be highly advisable. The application of a blister between the shoulders may assist in affording relief towards the close of the disease.

It has been observed, that when the disease has made some progress, vesicles of various sizes usually arise. The most proper application will be some dry mealy powder, such as starch, wheat-flour, oatmeal, or chalk; but oatmeal may perhaps be preferable to the rest on account of its not being likely to cake and become hard by the humour which weeps from the parts affected. Probably external applications that reduce the heat of the skin might be employed with advantage.

Some prejudices have indeed long existed against the use of cold applications in erysipelas. Cooling lotions have nevertheless been employed in this disease with great advantage.† I have myself frequently recommended linen cloths wetted with a cooling lotion of equal parts of the liquor ammon. acetatis, or of muriated ammonia dissolved in water, with the addition of a little vinegar and camphorated spirit, in erysipelatous inflammation, with much benefit and relief to the feelings of the patient, when the application of farinaceous powders has seemed indeed rather to aggravate than sooth his sufferings. No solution, either of lead, copper, or alum, should be employed, as these would be injurious.

When effusion is found to have occurred in any considerable quantity, it ought to be discharged by making a small opening in the most dependent part. It has been usual to employ emollient fomentations and poultices in this state of the complaint, in order to bring on a proper suppuration; but the effusion which sometimes happens in erysipelas not being of a nature to be converted into pus, as in the case of a pure phlegmon, they certainly cannot prove serviceable. The ceratum plumbi compositum, or ceratum plumbi acetatis, will be the best application.

Erysipelas phlegmonodes is a species of inflammation which,

† See Cooper's Dictionary of Practical Surgery, and also his First Lines of the Practice of Surgery.

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* 1. ℞ Misturæ Camphoræ, f. ℥j.
Liquor. Ammon. Acet. f. ℥iij.
Vini Antimon. Tartarizat. ℥xij.
Syrup. Simpl. f. ℥j. M.
ft. Haustus, quartis horis adhibendus.

* 6. Take Camphorated Mixture, one ounce.
Solution of Acetate of Ammonia three drachms.
Wine of Tartarized Antimony, eighteen drops.
Syrup, one drachm.
Make them into a draught, to be taken every four hours.

we are informed by a late writer,* is very prevalent in the British navy, and ascribed by him chiefly to the nature of the diet of sailors, and the sudden alterations of temperature to which they are exposed. Its active influence is found more especially directed to the recticular or condensed cellular substance, forming the muscular aponeurosis, although it often primarily affects the skin, and is thence communicated to that membrane. When pus is formed, it more frequently appears beneath the aponeurosis, in contact with the muscles, and generally destroys that membrane rapidly. It has, however, been found occasionally to commence in the periosteum, detaching that membrane and insulating the bone. A peculiarity in the plan of treatment, recommended by the surgeon alluded to, consists in making free incisions with a scalpel on the inflamed surface, down to the muscles, previous to any secretion of pus having taken place.

Such are the means to be employed when erysipelas happens to be combined with phlegmonous inflammation. When it arises in advanced life, or a weak delicate habit, assumes the typhoid character, and is accompanied with symptoms of irritation, such as depression of strength, a quick small pulse, &c., to take off the irritability, and guard against a termination in gangrene, which sometimes ensues, we should give the bark of cinchona, mineral acids, snake-root, camphor, aromatic confection, and wine. In those cases where the disease is confined to the trunk and extremities, and where there is considerable pain and irritation, the employment of opium seems advisable: indeed, I have used it on such occasions seemingly with much advantage. In erysipelas of the face, even without coma or delirium, from the tendency of this form of the disease to affect the brain, opium is to be regarded as a more doubtful remedy.

Where a tendency to mortification becomes apparent, the above medicines, with wine and other antiseptics, will be the more necessary.—(See Phlegmonous Inflammation terminating in Gangrene.) Ammonia joined with aromatic confection may be given internally, with some probability of advantage, in all cases of erysipelatous inflammation of the extremities or other parts, which threaten to terminate in gangrene. When erysipelas is accompanied with a tendency to the worst kind of hæmorrhage, from being of a malignant nature, alum and the sulphuric acid are particularly indicated.

If the disease is mild, and unaccompanied with febrile symptoms, it will be sufficient to keep the patient within doors, without confining him to his bed.

In those cases where the inflammatory symptoms run high, the diet should consist of light nourishing things, such as preparations of barley, sago, tapioca, rice, Indian arrow-root, panado, and the like; and his drink should be lemonade, tamarind-beverage, or

* See Surgical Observations by Mr. Copeland Hutcheson.

barley-water acidulated with some vegetable acid; but in those cases where symptoms of irritation prevail, a more generous diet, such as animal broths, and a moderate use of wine, ought to be allowed.

For the treatment of the erysipelas with which infants are liable to be attacked, see the diseases peculiar to them at the end of this work.

PHRENITIS, OR INFLAMMATION OF THE BRAIN AND ITS MEMBRANES.

PHRENITIS is an inflammation of the parts contained in the cavity of the cranium, and may affect either the membranes of the brain, or the brain itself. It is called primary, or idiopathic, when it exists independent of any other disorder; and symptomatic when it arises in consequence of some other disease, as fevers and inflammatory affections; which species is that most universally met with, the other occurring but very seldom, at least in this country. In warm climates, it appears to be sometimes produced by exposure to the intense rays of the sun, and often proves quickly fatal.

Its characteristics are vehement pyrexia, severe pain in the head, redness of the face and eyes, intolerance of light and sound, watchfulness, and violent delirium.

The causes which give rise to idiopathic phrensy, are such as directly stimulate the membranes or substance of the brain, or increase the impetus of the blood in its vessels: hence violent fits of passion, intense study, excessive venery, severe exercise, external violence of any kind, such as blows on the head, concussion, fissure or fracture, an immoderate use of vinous and spirituous liquors, a long-continued exposure to the heat of the sun, and the suppression of accustomed evacuations, as hæmorrhois, menses, issues, milk drying up, &c., may be regarded as the remote causes. Many acute diseases, and a long want of sleep, may give rise to symptomatic phrensy.

The idiopathic is usually preceded by long-continued and almost constant watching, or frightful dreams, acute pains at first in the neck and occiput, afterwards extending to the head, deep respiration, inability to recollect circumstances which have lately happened, suppression of urine, and irregular pulse. As the disease advances, the eyes sparkle, and are violently agitated; there is a ferocity in the countenance, with universal restlessness, deafness, great confusion of ideas, violent ravings, intolerance of light, evident pulsation in the temporal and carotid arteries, and the most furious delirium. The tongue is dry, rough, and of a yellow or black colour; the face is of a deep red; and the pulse is small, quick, and hard.

The symptomatic phrensy is constantly preceded by acute fever, or some inflammatory complaint, and is usually accompanied with

inability to sleep, constant watching, delirium, picking at the bed-clothes, redness and fierceness of the eyes, wild look, and deep breathing.

Phrenitis is distinguished from mania by the quickness of the pulse, and the attendant fever and pain in the head; and from that species of delirium which occurs in low fevers, unaccompanied with inflammation, by the appearance of the countenance and eyes; for in true phrensy the face is red, the features are rather enlarged than shrunk, and the eyes protuberate and sparkle: whereas in the delirium supervening to low fever, the face is pallid, the features are shrunk, and the eyes pearly. It is to be distinguished from synocha by the state of the pulse; as in the latter it is strong and full, whereas in the former it is small, hard, and more rapid. In phrenitis, the delirium is the primary affection; but in synocha, it is consequent upon the general fever.

Phrenitis, whether idiopathic or symptomatic, may always be regarded as a dangerous and alarming complaint: it often proves fatal between the third and seventh day; and, if long protracted, is apt to terminate in mania, or great prostration of strength: it often terminates in stupor and insensibility. In children, an effusion of water between the membranes of the brain, or in the cavities of its ventricle, is a frequent consequence. Grinding of the teeth, white or ash-coloured fæces, suppression of urine, startings of the tendons, with convulsions, cold sweats, a fluttering pulse, and coma supervening on delirium, denote a fatal termination: on the contrary, when there is a copious hæmorrhage from the nose, mouth, or lungs, or even from the urinary passages or hæmorrhoidal vessels, or when diarrhœa ensues, when the delirium is relieved by sleep, and the patient remembers his dreams, when the perspiration is free and general, the deafness diminished or removed, the pulse less frequent, but fuller and soft, and the febrile symptoms become milder, there are hopes of a recovery.

Dissections of persons who have died of phrenitis have shown the brain and membranes red and inflamed, the membranes considerably thickened and hardened, and in a few instances the pia mater has been found as thick as the dura mater. In some cases, abscesses in the ventricles and adhesions of the dura mater to the skull have been perceived.

On the first coming on of idiopathic phrensy, immediate recourse should be had to bleeding, proportioning the quantity that is drawn off to the age and constitution of the patient, and the severity of the symptoms. The orifice which is made with the lancet should be large, and the patient, if possible, ought to be placed in an erect posture. The blood drawn off is usually buffy and cupped upon cooling. Opening the jugular vein, or temporal artery, may be preferable to drawing blood from the arm; and taking away a considerable quantity at once will certainly be better than drawing off only a little at a time, and repeating the

operation frequently. Thirty or forty ounces of blood taken at one operation, will more decidedly stop the progress of the disease, than sixty or eighty drawn off by dribblets of twelve or fourteen ounces at a time. A man who in a state of health would faint from the abstraction of a pound of blood, will, when an inflammatory diathesis is present, suffer the loss of two or three pounds, without any, or but trifling inconvenience. If the patient is perceived to be much reduced by the largeness of the evacuation, and the disease should nevertheless still continue with violence, the application of several leeches to each temple will be more advisable than any repetition of bleeding from the system. When leeches are not to be procured, blood may be abstracted by means of a cupping-glass and scarificator.

The next proper step to be taken, will be to direct the head to be shaved, and to apply a large blister over it. Linen cloths wetted with vinegar and water, cold spirituous lotions, diluted æther, or iced water, may likewise be kept constantly to the temples and forehead; and they should be re-wetted as often as they acquire the temperature of the scalp by continuance. Topical cold over the region of the brain by a wet towel, or other like medium, will indeed, in many cases, prove more efficacious than the application of a blister; as this has been observed occasionally not only to accelerate the pulse, but likewise to render the patient more unmanageable.

With a view of obviating the inflammatory diathesis, and of diverting the humours from the head, a strong purge* may be ordered; and this ought to be repeated every second or third day during the continuance of the complaint. Purgatives of the saline kind are good antiphlogistics, and may be prescribed as well as others. When we cannot employ purgatives, laxative clysters may be used. In all inflammatory affections of the head, a copious discharge from the intestines will be found highly beneficial; and experience has indeed ascertained that venesection itself is often less powerful. To assist in diminishing the determination of blood to the head, the patient should be kept as near the erect posture as can easily be borne.

Warm bathing of the lower extremities, and the application of rubefacients to them, for the purpose of revulsion, have been very generally employed in idiopathic phrenitis. By some phy-

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* 1. ℞ Hydrargyri Submur. gr. viij.—x.
Extract. Colocynth. gr. vj. M. fiant Pilulæ iij. pro dos.
Vel,
2. ℞ Pulv. Jalapæ, gr. xv.—℈i.
Hydrargyr. Submur. gr. vj. M. ft. Pulvis Cathartieus.

* 1. Take Submuriate of Mercury, from eight to ten grains.
Extract of Colocynth, six grains.
Form the mass into three pills for a dose.
Or,
2. Take Powdered Jalap, from fifteen grains to one scruple.
Submuriate of Mercury, six grains.
Mix them, and let the cathartic powder be taken at once.

sicians, and particularly by Dr. Cullen, they have, however, been regarded as ambiguous remedies; and it is probable that they will be likely to do harm, if employed before the excitement has been sufficiently reduced.

From the well known power of digitalis in lessening the action of the heart and arteries, it is probable that small doses of it, administered from time to time, might prove beneficial.

Opiates have not been thought advisable remedies in this disease; hyoscyamus might however be serviceable, if we at the same time employed copious evacuations and a low diet.

In symptomatic phrenitis, particular attention should be paid to the primary disease which has given rise to it, and the treatment ought to be varied according to the nature and progress of the disorder which has occasioned it. If it is in its first stage, and inflammatory, copious bleeding from the system will be necessary; but if it has been of some continuance, drawing blood from the temples, by means of leeches or cupping with scarifications, will be preferable.

Symptomatic phrenitis will not require our using active purgatives; on the contrary, we should keep the body open only with gentle aperients, or laxative clysters, administered from time to time, as the occasion may require. In most cases, the application of a blister to the neck, or between the shoulders, will be proper. As a medicine, the patient may take in both species of phrenitis a diaphoretic bolus* every three hours, washing it down with two or three table-spoonsful of some febrifuge mixture.†

If phrenitis arises in consequence of some suppressed evacuation or eruption, we must endeavour to restore it by the proper means, which will be understood from the nature of the former discharge.

During the whole course of the disease the patient ought to be kept cool, and as quiet and undisturbed as possible, excluding light from him; and his food should be mild and nourishing, consisting of preparations of barley, sago, gruel, &c. Cold acidulated liquors should be allowed with freedom. In idiopathic phrenitis, every part of the antiphlogistic regimen will be necessary.

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* 3. ℞ Camphoræ, gr. iv.
Pulv. Antimon. gr. ijss.
Confect. Rosæ, q. s. M.
ft. Bolus.

† 4. ℞ Succ. Limon. f. ℥ jss.
Ammoniæ Subcarbonat. ℈ss. vel q. s. ad ejus saturationem; dein adde
Aq. Menth. Virid. f. ℥ j.
— Fontan. f. ℥iv.
Potassæ Nitrat. ℈j.
Syrup. Rosæ, f. ℥ij. M.
ft. Mistura.

* 3. Take Camphor, four grains.
Antimonial Powder, two grains and a half.
Confection of Roses, a sufficiency to form the whole into a small bolus.

† 4. Take Lemon Juice, one ounce and a half.
Subcarbonate of Ammonia, half a drachm, or a sufficiency to saturate the acid; then add
Mint Water, one ounce.
Pure Water, four ounces.
Nitrate of Potass, one drachm.
Syrup of Roses, two drachms.
Mix them.

OPHTHALMIA, OR INFLAMMATION OF THE EYE.

OPHTHALMIA is of two kinds, viz. the idiopathic and symptomatic; the latter proceeding either from diseases of the eye, or parts in its neighbourhood, or from diseases of the system; and the former from the causes hereafter assigned.

In ophthalmia, the inflammation is seated either in the membranes of the eye, its deep-seated parts, muscles, and the lachrymal gland, or in the sebaceous glands placed in the edges of the eyelids: but sometimes all these parts are affected in consequence of sympathy; and indeed it rarely happens that any of these suffer in a considerable degree without the inflammation extending further. It readily spreads along the conjunctiva, from the tarsi to the eye, or in the contrary direction. When the conjunctiva is much inflamed, the adnata soon partakes of the inflammation; and if the complaint increases, it gradually spreads to the deep-seated parts.

With some people there is a great tendency to a recurrence of the disease; and in many cases it has been observed to renew its attacks, or to have regular exacerbations, at a particular time of the day.

The causes producing ophthalmia are, external injuries, such as blows, contusions, and wounds on the eyes; extraneous bodies of an irritating nature, introduced under the eyelids; exposure to bleak winds and cold; little inflammatory tumours called styes, which rise on the eyelids; various acrid fumes acting as chemical stimuli, such as the smoke of pitcoal, that of wood, turf, &c.; too free a use of vinous and spirituous liquors, the suppression of accustomed discharges, the long application of a strong light, or fixed attention to minute objects, and an acrimony prevailing in the mass of blood. To these causes we may, perhaps, add with some propriety the bare inspection of the eyes of a person when in a highly inflamed state; for although practical writers have not enumerated it among the causes of ophthalmia, yet I have occasionally met with cases which appeared to arise from this, as previous to inspecting the diseased eyes the person made not the least complaint, but very soon afterwards complained of uneasiness in his own. The occurrence once happened indeed to myself, and the inflammation that ensued was very violent. Ophthalmia is sometimes symptomatic of other diseases, such as measles, small-pox, scurvy, scrofula, and syphilis.

A very obstinate and dangerous species of ophthalmia of the purulent nature is now and then produced by the accidental application of gonorrhœal matter to the eye, or eyes. A distressing case of this nature, wherein the patient, a very stout man, was for ever totally deprived of sight by imprudently washing his eyes with his urine, whilst labouring under gonorrhœa, lately came under my observation.

Mons. Sonnini, in his Travels through Egypt, mentions, that ophthalmia is a complaint which is endemical in that country, and that eyes perfectly sound, or which are not swelled, are rarely to be seen. This he attributes to the excessive heat, the air being impregnated with noxious particles, and the acrid and burning dust which the winds scatter in the atmosphere. Another cause of the cecity so general at Cairo, he says, is the frequent watering of the streets and houses. Water, thrown abundantly and frequently upon a burning soil, containing a great many saline particles, produces, he observes, acrid vapours, which may be considered as one of the principal causes of blindness in Egypt.

Sir Robert Wilson mentions* that the Egyptian ophthalmia is supposed to originate in the nitrous particles emitted from the ground by the force of the sun, which are of a quality so pungent and penetrating as to injure the fine vessels of the eye. The acrid and burning dust flying continually in the atmosphere, irritates still more the already affected part; while the reflection of the soil, the heat of the air, and vivid light of the sky, tend to weaken the sight, at last occasioning excessive inflammation.

According to the best information which we have received, this species of ophthalmia arises in the first instance soon after the overflowing of the Nile, or rather on its recession, when a vast quantity of slimy mud is deposited on its banks and other places which were overflowed, and which being acted upon by a powerful sun, send forth miasma, or effluvia, that excite inflammation in the eyes of this peculiar nature. The custom in Egypt of sleeping in the open air, possibly may increase the power of the cause.

Ophthalmia has not been considered in Great Britain as a contagious disease, although it has often been known to appear as a prevailing epidemic at different times; but it is an undoubted fact, that the Egyptian species is highly contagious. During the campaign in Egypt our troops were dreadfully afflicted with it, and many returned with a total loss of sight; whilst others, still labouring under the disease, propagated it at Malta and Gibraltar, where they first landed; and from which places it was at length brought into this country.

It seems to be established, I think, on the most indisputable evidence, that the Egyptian ophthalmia may be propagated by contagion, and that in this way it has been introduced into our United Kingdom, and has spread in the same manner as in its native soil. The influence of climate, and other local circumstances, on the general character and progress of the disease, cannot, however, be denied. In most of the instances in which this species of ophthalmia has prevailed in this country, it has

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* See his History of the Expedition to Egypt.

appeared with mitigated symptoms, in comparison with the disorder as it occurs in Egypt; but it has nevertheless been observed, that where the patients were exposed to the influence of a marshy soil, it equalled in the severity of its symptoms the Egyptian ophthalmia. A modern writer* assures us, that its spreading is not owing to contagion in the ordinary sense of the word (that is, to any infectious matter thrown off from the system of those labouring under the disease, and operating at a greater or less distance from its source), but to the actual conveyance of the purulent matter from the inflamed organ to the eye of the person in health. Dr. Edmonston has also pointed out,† that the sphere of action of this contagion is very limited, and that most of the cases which came under his observation arose from the direct application of virus from diseased to sound eyes.

It has been indeed ascertained as a fact, that many soldiers, with the hope and view of obtaining a discharge from their regiments, absolutely inoculated their eyes with the contagious matter, thereby inducing a loss of sight in one or both.

The late Mr. Ware was of opinion,‡ that the disease which has appeared as a prevailing epidemic among soldiers since the return of our troops from Egypt, ought to be denominated the purulent ophthalmia instead of the Egyptian; since one of its chief symptoms, and that which distinguishes it from any other, is the profuse discharge of a purulent coloured fluid, closely resembling the pus or matter that issues from an ulcerated surface. He also thinks that it greatly resembles, in many respects, a disorder, which he has described with minuteness in his Observations relative to the Eye (see vol. i. pp. 129 and 309), under the title of the Purulent Eye of new-born Children, and in which, no less than in that under consideration, the discharge of matter is always profuse.

The common ophthalmia usually comes on with a sensation as if some gritty particles had insinuated themselves under the eyelids, accompanied with great heat, redness, and pricking darting pains. As it increases, the parts swell, and the vessels of the eye become not only increased in size, and turgid, but appear more numerous than in the natural state. Great pain is excited upon the least motion of the ball of the eye; the patient cannot bear the light; and an affusion of tears from the lachrymal gland ensues, which is of so acrid a nature as to excoriate every part on which it happens to fall. When the inflammation runs high, a slight febrile disposition often attends. These appearances, after some days' continuance, gradually abate, and at length entirely cease; but in some cases, a discharge of thick glutinous matter

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* See an Account of the Ophthalmia which has appeared in England since the return of the British Army, by J. Veitch, M. D.

† See Edmonston's Account of an Ophthalmia which appeared in the 2d Regiment of Argyleshire Fencibles in 1802, with Observations on Egyptian Ophthalmia.

‡ See his Remarks on Purulent Ophthalmy.

ensues, which collects in considerable quantities about the angles of the eye, particularly during sleep. Where only one eye has been affected, it is often succeeded by an inflammation of the other, particularly in a scrofulous habit.

In the Egyptian ophthalmia, the symptoms which present themselves are somewhat different from those of common ophthalmia. In the early stage of the former, the conjunctiva is red, swelled, and turgid; the secretion of tears is copious; the patient complains of excessive pain, and roughness of the ball of his eye, and he cannot bear even a feeble light. The eyelids are red at their edges, and swelled, and there is often a sense of weight and scalding of the eye. Sometimes there is a soreness of the integuments of the forehead and temples, with rigors, a quick hard pulse, headach, and other febrile symptoms. In a very short time, œdematous swelling and tension of the eyelids, and prodigious tumefection and turgescence of the conjunctiva, with a feeling as if the eye was about to burst out of the head, succeed to the other symptoms. The least ray of light falling on the retina gives acute pain, and excites in the patient the feeling as if some sharp instrument was thrust into his eye.

In some cases the under eyelids are turned somewhat outwards; in others both eyelids are closed and swollen, and the skin of these parts has an efflorescent shining appearance. It is not unusual to see the eyelids open, and the conjunctiva so swelled and turgid as to protrude from the eye in the form of two or three folds. When the tumefaction of the conjunctiva is not very great, and the eye can be brought fully into view, the cornea sometimes appears pellucid, the pupil is contracted, and the iris discoloured, or, as it were, full of spots.

As the inflammation proceeds, a secretion of purulent-like matter takes place from the surface of the conjunctiva and glands of the tarsi. This matter is pent up for some time within the eyelids in those cases in which the tarsi come in contact; but in others, where they remain separated, it flows from the eye mixed with tears. It is so acrid as to irritate the eye exceedingly, and to excoriate the palpebræ and cheeks in passing over them. In this stage of the disease the sufferings of the patient are excessive. He is hot and feverish, cannot remain long in one posture or situation, gets no sleep either by night or day, and describes his feelings, as if boiling water was poured into his eyes.

If a sight of the ball of the eye can now be obtained, it is found bathed with the purulent matter; the cornea is muddy in a part or the whole of its extent, or its surface is studded with small white spots. These appearances denote the commencement of a suppuration of the cornea. Sometimes the whole of the cornea is included in the suppuration, and destroyed; the iris is laid bare, the lens and vitreous humour are forced on the iris, or entirely evacuated, and even the form of the eye does not remain. At other

times only a portion of the cornea suppurates, and the sight is more or less affected afterwards, according to the point at which the suppuration has taken place, and the extent to which it has gone. If the abscess be situated before the pupil, and if it penetrate the whole depth of the cornea, the aqueous humour, in escaping, will carry with it a portion of the iris through the aperture in the cornea; and the pupil will be in general totally obliterated by the protusion of the iris, and its subsequent adhesion to the sides of the ruptured cornea.

During some violent paroxysm of pain, from the excessive increased volume of the whole compages of the eye, locked within the orbit, the coats of the eye at length give way. By this circumstance the tension in the parts is considerably diminished, the inflammation gradually subsides, and the state of the eye begins to improve, unless in the melancholy instances in which the iris continues to protrude.

Such is the most violent form of the disease; but even in slighter cases, where no rupture of the cornea takes place, on the discharge of pus ceasing, a number of granulations are sometimes perceived to arise, on an inspection of the eye, from the interior of the eyelids, and to present a shocking spectacle.

With some, the Egyptian ophthalmia lasts only nine or ten days: in others, the patients have suffered for months: and unfortunately there is no security, we are informed, against a new attack, even after a perfect recovery.

The common ophthalmia, when slight and not symptomatic of any other disease, will readily give way to proper means; but if it is very violent, or has continued for any length of time, it is apt to occasion specks, or to terminate in a dimness of sight or opacity of the crystalline lens. In some cases, the inflammation terminates in suppuration of the cornea and deep-seated parts. When it arises in a scrofulous habit, or is symptomatic of syphilis, the cure is often tedious.

In the treatment of ophthalmia, its varieties of idiopathic and symptomatic, and of acute and chronic, ought duly to be considered, and to form the basis of our practice. Our object therefore should be, to determine with precision, how far each particular case is to be referred to one or other of these kinds, and to adopt our plan accordingly.

Those who are engaged in an extensive practice, now and then meet with cases of idiopathic and acute ophthalmia, accompanied not only with a high degree of organic inflammation, but likewise with much systematic derangement, such as thirst, great heat of the body, fulness and frequency of the pulse, severe pains in the head, and violent throbbings of the temporal arteries. Such instances are, however, rare; but when they do occur, general bleeding or venesection ought not to be neglected; and we should take care to proportion the quantity we draw off to the existing

circumstances, and quickly to repeat it, if necessary. In patients afflicted with violent ophthalmia, it will always be best to bleed from a large orifice as they stand erect upon their feet, as it sooner makes an obvious and great impression upon the circulation than in any other way, and thereby enables us to attain our object by a moderate abstraction of blood: the tunica adnata, which before venesection in this way had been intensely red, will often be found comparatively whitened after it, with a most sensible relief in almost every other respect. In the worst cases the blood may be drawn from the jugular vein or temporal artery, in preference to taking it from the arm.

In general, however, ophthalmia is only a local affection, accompanied with little or no fever, except what is excited by the irritation or pain in the organ, and this but trifling; and therefore it will not often be necessary to resort to general bleeding: the preferable way will be to draw blood from the neighbourhood of the affected part, by applying several leeches round the eye; which process we may repeat again and again, as long as the inflammation continues. They ought not, however, to be applied on the upper, but on the under lid. We are informed by Dr. Crampton,* that from his having observed in many instances what little impression is made upon the inflamed and turgid vessels of the conjunctiva by the application of leeches, even in great numbers, to the eyelids or temples, and that when applied to the eyelids in particular, they frequently excited erysipelatous affection—he was led to try the effect of applying a leech or two to the inflamed conjunctiva itself, where it lines the lower eyelid; and from the success which attended the practice in several cases, he can with confidence recommend it to other practitioners, as affording the most powerful means of which we are possessed for subduing inflammation of the eye, whether chronic or acute, and whether affecting the conjunctiva, or the more interior structures of the organ. The mode of application is simple, and as follows: The patient is to be placed with his back to the light, that the lower eyelid may be everted without exciting pain; a small leech or two should then be allowed to fix upon that part of the inflamed membrane which covers the tarsus, taking care that it fastens neither upon the ciliary margin nor upon the eye itself. The leech fixes, and fills himself in such a situation much more quickly than upon a cuticular surface.—Where leeches cannot be procured, blood must be drawn from the temples by scarifying and cupping. If the inflammation runs high, so as to endanger vision, by producing an opacity, it will be advisable to make scarifications daily, with the edge of a lancet, on the turgid vessels of the adnata itself; which, if done by a steady hand, will be attended with no kind of danger, but, on the contrary, with infinite advantage. Its

* See Dublin Hospital Reports, Vol. III. Article 1st.

effects in diminishing inflammation are very great, even though no more than a few drops of blood be obtained; and the relief is frequently so considerable as to induce patients, after once undergoing the operation, to request its repetition.

It is almost unnecessary to observe, that when ophthalmia has arisen from any extraneous body getting into the eye, as particles of sand, dust, lime or metal, small flies, the hairs of the eyelids, &c., the irritating cause ought immediately to be removed, and the part be defended from the light by the patient's wearing a deep shade of green silk, and sitting in a darkened room.

Having adopted topical bleeding, we may then order some active purgative to be taken; and this should be repeated every third or fourth day, as long as may be found necessary.

A few grains of hydrargyri submurias, with a sufficient quantity of jalap, or a solution of any of the neutral salts, will best answer the intention.

Where the complaint has arisen from exposure to cold, or other causes suppressing the perspiration, it is probable that the patient may receive benefit from small doses of some antimonial preparation, given so as to excite a proper diaphoresis.—(See Synochus.) The pediluvium may also be employed with the same intention.

It was a common practice of the late Mr. Saunders, who was esteemed a very eminent oculist, to employ emetics, particularly a solution of tartarized antimony, in the early stage of every variety of acute ophthalmia, so as to produce nausea or full vomiting; and the same practice has been adopted by Sir William Adams with the greatest success, especially in that species of it which has been denominated the Egyptian.

To abate the inflammation and irritation, it is customary to have recourse to the frequent application of some cooling and astringent wash. Such remedies, applied to the eye by means of an eye-cup, or by wet pledgets, prove, beyond a doubt, highly serviceable. Another mode of using washes is by everting and extending the eyelids, and then injecting the fluid over the whole surface by means of a small syringe made of elastic gum or ivory. Any of the undermentioned lotions* may be used. Where the

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* 1. ℞ Zinc. Sulphat.
Plumbi Acetatis, āā gr. viij.
Aq. Distillat. f. ℥vj. M.
ft. Collyrium.

Vel,

2. ℞ Liquor. Ammon. Acetatis,
Aquæ Rosæ, singul. f. ℥ij.
Misturæ Camph. f. ℥j. M.

Vel,

3. ℞ Aluminis Purif. ℥ss.
Aq. Rosæ, f. ℥vj. M.

* 1. Take Sulphate of Zinc,
Acetate of Lead, of each eight grains.
Distilled Water, six ounces.
Mix them for a Wash for the eyes.

Or,

2. Take Solution of Acetate of Ammonia,
Rose Water, of each two ounces.
Camphor Mixture, one ounce.
Mix them.

Or,

3. Take Alum, half a drachm.
Rose Water, six ounces.
Mix them.

pain is very acute, forty or fifty drops of the vinous tincture of opium may be added to any of the foregoing applications; or the eyes may be bathed frequently with a decoction of bruised poppy-heads. In such cases, an internal use of opium will also be advisable; and it may therefore be taken in doses of a quarter of a grain, repeated every four or six hours.

For the purpose of appeasing heat and inflammation in the eyes, some practitioners prefer warm collyriums to cold ones; and among this number, I think, was the late Mr. Ware. The fact is, that inflammation of the eyes sometimes yields to cold applications, and at others it resists them. In instances of the latter nature, the application of warm fomentations may be used. The alternate use of cold and hot applications has sometimes succeeded when neither of them singly appeared capable of putting an end to the diseased action.

In inveterate cases of ophthalmia, where inflammation prevails n a high degree, it probably might be advantageous to drop into the eye a strong infusion of digitalis, or the extract of belladonna dissolved in water. The former, I understand, is much employed by an eminent veterinary surgeon for the purpose of subduing violent inflammation in the eyes of horses, and with a very good effect.

When ophthalmia is found not to yield to bleeding, both general and topical, duly repeated, purgatives, emetics, fomentations, and the other means which have been pointed out, it will be proper to put a blister at the back of the neck, or behind the ear on the side with the eye which is affected, supposing only one to be diseased; and to promote a proper discharge, it ought to be dressed with some stimulating ointment.* In those cases where the disorder appears to be constitutional, or to be kept up by any acrimonious humour in the habit, issues between the scapulæ, or the insertion of a seton in the neck, will be advisable.

Errhines have been recommended in instances of habitual ophthalmia, and probably may sometimes prove good auxiliary remedies. The pulvis asari compositus may be used on the oc-

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Vel,

4. ℞ Aq. Rosæ, f. ℥iij.
Liquor. Plumbi Subacetat. ℳxij. M.

Vel,

5. ℞ Zinc. Sulph. gr. x.
Aq. Rosæ,
Mistur. Camphor. āā f. ℥iij. M.

* 6. ℞ Cerat. Resinæ, ℥j.
—— Cantharid. ℥iij. M.

ft. Unguentum.

Vel,

7. ℞ Cerati Sabinæ. ℥j.

Or,

4. Take Rose Water, three ounces.
Solution of Subacetate of Lead, eighteen drops.
Mix them.

Or,

5. Take Sulphate of Zinc, ten grains.
Rose Water,
Camphorated Mixture, of each three ounces.
Mix them.

* 6. Take Resin Cerate, one ounce.
Cerate of Spanish Fly, three drachms.
Mix them into the form of an ointment.

Or,

7. Take Savine Cerate, one ounce.

casion. The pulvis digitalis will likewise excite a copious excretion from the membrane which lines the nostrils, although not generally known to possess such a power.

In chronic and strumous ophthalmia, the vinous tincture of opium is one of the best applications we can employ, and was much used by the late Mr. Ware in such cases.

It has been mentioned, that in ophthalmia the eyelids are apt to be glued together (particularly during sleep) by a thick glutinous matter which is secreted. To prevent this inconvenience, their edges should be anointed with a little soft ointment* every night, or every night and morning. In the ophthalmia tarsi, arising from a scrofulous habit, the unguentum hydrargyri nitrico-oxydi, mixed with an equal quantity of adeps præparata to render it milder, is one of the most powerful remedies we can employ. Red precipitate mixed with lard is sometimes used, and it seems to be serviceable by destroying the small ulcers that now and then appear on the edges of the eyelids. About fifteen grains of it to an ounce of adeps præparata seems to be the strongest proportion that can be used with safety. It will seldom be necessary to use poultices for an inflammation of the eye, except it is of the purulent kind; in which case we may apply with advantage one made by stirring a lump of alum in the whites of two eggs, until they form a coagulum, and this is to be laid to the eye between two pieces of thin linen or muslin. Cold poultices of rasped potatoes and turnips are often used on such occasions.

Mr. Ware was of opinion that the purulent is very similar to the gonorrhœal ophthalmia. He found the purulent eye, we are told,† most commonly to occur in the children of those women who have had an acrimonious discharge from the vagina at the time of delivery; and the purulent ophthalmia of adults, he thinks, is very generally found connected with some gonorrhœal affection. In public schools he noticed the disease to spread, obviously in consequence of the indiscriminate use of basins and towels among the children. Hence, he believes that the purulent ophthalmia arises from the direct application of some poisonous matter to the eyes.

Two or three cases of purulent ophthalmia in infants, and evidently arising from their mothers being afflicted with leucorrhœa at the time of delivery, have lately been under my care; and I am apt to think that the reason why more children are not affected in

† See his Remarks on the Purulent Ophthalmia.

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* 8. ℞ Tutiæ Præparat. ℥j.
Unguent. Cetacei, ℥j. M.

Vel,

9. ℞ Adipis Præparat. ℥j.
Zinc. Sulphat. ℥ss. M.

Vel,

10. ℞ Ceretum Plumbi Acetatis.

* Take Prepared Tutty, one drachm.
Spermaceti Ointment, one ounce.
Mix them.

Or,

9. Take Prepared Lard, one ounce.
Sulphate of Zinc, half a drachm.
Mix them.

Or,

10. Take Cerate of Acetate of Lead.

the like manner, is owing to the careful ablution they usually undergo immediately after birth, and before they are dressed. The disease is found to prevail mostly among the lower classes of society, who, we may naturally suppose, are not so attentive to cleanliness as those in a higher sphere of life.

Mr. Gibson, of Manchester, seems to have been the first to attribute this disease in new-born infants to the cause just assigned; and he thinks it highly probable, from the frequent coincidence of fluor albus in the mother, and the puriform ophthalmia in the child, that these disorders stand in the relation of cause and effect to each other: but, at the same time, he by no means wishes it to be understood as supposing leucorrhœa to be the only cause of a puriform discharge from the eyes of an infant. In some cases, it possibly may arise from exposure to cold, or from a peculiar constitution of the atmosphere.

Mr. Ware appears to have described and treated one of the symptoms of purulent ophthalmia as if constituting it, and seems to have overlooked the relation between the inflammation and the discharge, of cause and effect. He states the first stage of the disease to be an increased discharge from the minute pores of the conjunctiva; and attributes the subsequent affection of the cornea to the eroding quality of the retained matter, joined to the pressure of the swollen eyelids. In conformity to this hypothesis, he thinks the indication of cure consists in immediately constringing the relaxed vessels by strong styptic injections. The late Mr. Saunders* has stated the disease to consist in an inflammation of the conjunctiva, which is affected much in the same way as the membrane of the urethra in gonorrhœa: he therefore advises that a strict antiphlogistic plan should precede the use of injections, and that when the activity of the inflammation has subsided, the injections should be of a mild nature.

If ophthalmia is dependent on a venereal taint, mercury is the remedy we must rely on to remove it. When it arises in a scrofulous habit, affecting chiefly the tarsi, and is attended with ulcerations, as is often the case, cinchona bark, with alteratives, mineral waters, and sea bathing, will be the most proper remedies. In these cases, hemlock, combined with cinchona bark, has sometimes proved serviceable. Cinchona, with the carbonate of soda, may also have a good effect. At the same time that we are employing these remedies, we ought not to neglect topical applications. The edges of the eyelids may be smeared every morning and night with a little ointment,† composed of mercury or the sulphate of zinc.

* See his Treatise on some Practical Points relating to the Diseases of the Eye.

† 1. ℞ Unguent. Hydrarg. Nitratis,
Adipis Præparatæ, āā ℥ss. M.
ft. Unguentum.

† 11. Take Ointment of the Nitrate of Mercury,
Prepared Lard, of each half an ounce.
Mix them.

When a speck has ensued in consequence of previous inflammation, which has destroyed some part of the transparency of the cornea, it may be touched with some gentle escharotic on the point of a fine camel's hair pencil twice a day. In employing escharotics for the removal of opacities of the cornea, much care and attention will, however, be requisite, otherwise they may prove more injurious than serviceable.

That species of opacity which is seated on the external surface of the cornea, and accompanied with some growth, may sometimes be removed by the knife in a steady hand, or by dividing the blood-vessels going to it, but not always, as it is sometimes so much diffused as to render the operation impracticable. A case of opacity, which arose from a local injury, and which extended nearly over the whole lucid cornea, lately fell under my observation, and was entirely removed by having a few drops of the liquor cupri ammoniati admitted into the eye every day.

In opacities of the cornea, the application of animal gall to the part has been found to be efficacious, when other remedies have failed. Being a stimulant, it ought never to be applied while the inflammatory action is increasing, but should not be delayed one minute after the inflammation is at a stand, as an indolent unhealthy state is apt to take place, which too often terminates in opacities, that no applications can afterwards remove. It may either be used pure, or diluted; perhaps the latter may be most advisable at first, as it is apt to occasion a painful sensation; but this, however, soon goes off. Its effects seem to be similar to those of a weak solution of the argenti nitras.

We are informed by Mr. Ware,* that he has had occasion to attend a considerable number of cases, in which an opacity of the crystalline humour was produced by some violence done to the eye; and in most of these, the opacity was dissipated, and the sight restored, during the external application of æther.

He says, "In using this remedy, I have sometimes diluted it with a third or fourth of a weak solution of hydrargyri oxymurias; but in general I have used the æther alone, which has been applied by means of a camel's hair pencil to the eye itself. The application of the remedy occasions a very pungent pain in the eye, with considerable redness in the tunica conjunctiva; but these go off in a few minutes, and leave the eye as easy, and the conjunctiva as pale, as they were before the æther was used."

In all cases of ophthalmia it will be requisite to avoid every thing which might occasion irritation; for which reason the patient ought to be confined to a dark chamber, or, at least, he should wear a blind of green silk over the eye, to prevent a great

* See his second edition of Observations on the Cataract.

Vel,	*Or,*
12. ℞ Zinci Sulphat. ℈j. Adipis Præparat. ℥j. M.	12. Take Sulphate of Zinc, one scruple. Prepared Lard, one ounce. Mix them.

glare of light; and he ought likewise to abstain from reading, writing, and from all food of a heating or stimulating nature, and a use of vinous or spirituous liquors.

In severe cases the diet should be very spare and light, and the drink consist chiefly of some mild farinaceous decoction, which, while it allays thirst and supplies sufficient nourishment, tends both to moderate excitement and promote perspiration.

After the removal of ophthalmia, it may sometimes be necessary to employ means to prevent its return, by continuing the use of blisters behind the ears, or the insertion of an issue. In some instances, however, it may be connected with a debilitated habit, and then the best means of preventing its return are those which tend to strengthen the vessels of the eye, or the system in general; and these will sometimes remove habitual ophthalmia when all others have failed.

One of the most powerful of these means is the cold bath, which may be employed either by immersing the whole body, or by washing the head in cold water once or twice a day. The application of cold water to the eyes themselves, or of any astringent collyrium, by means of an eye-cup, twice or thrice a day, may likewise be serviceable in preventing the return of ophthalmia, or removing it after it has become habitual. Cinchona, and other tonics, have also been resorted to with a good effect.

In that species of the disease which has been denominated the Egyptian ophthalmia, a favourable termination will uniformly depend on our being able to moderate the inflammatory affection during its earliest stage, and therefore the first and great object of the surgeon should be directed to this end: for, if this is not effected, the structure of the visual organ will be destroyed, or be so altered as to impede or annihilate its functions. By a prompt application of proper means at the commencement, every bad symptom most likely will be arrested.

Bleeding, to the amount of sixteen or twenty ounces, or more, according to the urgency of the case, and the strength of the patient, is the first step to be adopted: and perhaps it may be preferable to draw off this quantity of blood from one or both of the temporal arteries, as one or both eyes may be affected, in preference to taking it from the arm; and to prevent secondary hæmorrhage it may be advisable to secure the divided artery by the tenaculum, as the pressure of a tight bandage round the temples will, in severe cases, add to the tumefaction of the palpebræ, and increase the pain and inflammation. Should the inflammation of the organ not be greatly moderated in six or eight hours after this bleeding, it will then be necessary to take away more blood in the same manner as before, again regulating the quantity according to the severity of the complaint. If our attempts to subdue the inflammation still prove ineffectual at the expiration of eight hours more, and the symptoms seem to require it, the operation ought to be repeated a third time in sufficient quantity.

We are told by Dr. Veitch,* that the principal remedy which has been productive of any good effect in the ophthalmia that has prevailed among the British soldiers since their return from Egypt, and to which the name of Egyptian ophthalmia has been applied, is bleeding; but in order to ensure its full power, that it has been found necessary to carry this evacuation to a great extent, and with a freedom far beyond what we have been accustomed to recommend. In short, he informs us that he found it absolutely necessary to draw off upwards of twenty ounces at a time, or rather to bleed the patient ad deliquium animi, and to repeat the operation pretty frequently to this extent.

Immediately after the first bleeding in the Egyptian ophthalmia, an active dose of purgative salts is to be administered, and this should be repeated every second or third morning. A large blister is to be applied at the same time either over the whole of the head, or behind the ears, and to the nape of the neck. The patient is to be lodged in a dark but well-ventilated room, and to be confined to a spare and antiphlogistic diet.

A tardiness in the use of evacuants, particularly a sparing use of the lancet, or its not being early resorted to, may be considered, in most instances, as the chief cause of subsequent disorganization and destruction of the eye, in the various shapes of suppuration, ulceration, sloughing, and rupture of the cornea, adhesions of the iris, opacities, &c., which are met with in cases of Egyptian ophthalmia; and even if these bad results do not occur, such omissions will tend to form and protract an obstinate chronic stage, from the debility induced in the vessels of the membranes, owing to previous excessive action and distention.

In this species of ophthalmia, as well as in severe cases of the common kind, it may be advisable to make frequent scarifications on the ball of the eye; but perhaps it may be the better way to carry the lancet along the inside of the lower lid, parallel to its edge, and not far distant from it. Scarifications made in this way will be far preferable to pricking the eyelid repeatedly in quick succession, as is sometimes practised. The issue of blood from the scarifications may be assisted by gently everting the lid with the end of the finger; and it will be more useful to take off the finger occasionally, and then to apply it again, and thus renew the eversion, than to continue the finger steadily on the lid.

Whilst, by large and sudden evacuations of blood from the system, as well as from the affected eye, we lessen the violence of the disease, and prevent either an opacity of the crystalline lens, or a rupture of the cornea from ensuing; we are, at the same time, to moderate the external symptoms, and lessen the secretion by local applications—linen cloths, dipped in some cooling lotion, (see those before prescribed,) should therefore be kept constantly to the eye, or eyes, if both are affected; and such applications as

* See his Treatise on the Egyptian Ophthalmia.

experience seems to have accommodated to the different stages of the disease, ought to be carefully dropt into the eye. The best appear to be the liquor plumbi subacetatis, properly diluted; solutions of alum, or sulphate of zinc, or the camphorated collyrium, prescribed below,* or before mentioned.

When we consider, however, that the morbid mucus is confined between the swelled conjunctiva that lines the eyelids, and that part of it which covers the globe of the eye, it must be evident that in order to bring the matter effectually away, the lotion must be propelled over the eye with some degree of force; and this cannot be better effected than by the use of a small blunt-pointed syringe, by means of which the medicated liquor may be conveyed over the whole surface of the eye, and the retained matter be each time entirely cleared away. The injection ought to be repeated at least once an hour during the height of the disease; but when the violence of the inflammation has abated, and the quantity of the discharge is decreased, a longer period may be allowed to intervene between the times of applying it.

In those cases where the pain of the eye and tumefaction of the conjunctiva are very considerable, it may be advisable not only to make the lotion of a weak standard, and to leave longer intervals between the times of employing it, but occasionally to interpose the injection of merely tepid water. Under the like circumstances, the frequent application of hot water also, or of a warm decoction of poppy heads, by means either of a flannel or of a large sponge, may likewise prove serviceable. During the inflammatory stage of the disease, and when the irritation is great, a warm poultice of bread and milk may be applied to the eye, renewing it frequently throughout the day. Possibly it might be of service to shave the head and keep cloths wetted with vinegar to it, the forehead, and temples.

The introduction of the vinous tincture of opium by a few drops at a time into the eye, will have a very good effect when employed in the early stage of the disease.

In the intermittent form of this and the other species of ophthalmia, where the pain observes periodical paroxysms, probably the administration of cinchona, during the intervals, may be attended with a very good effect.

Such are the means to be adopted in the treatment of this variety of ophthalmia. It sometimes happens, however, that in spite of

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* 13. ℞ Cupri Sulphat.
Bol. Armen. āā gr. viij.
Camphoræ, gr. ij. Misce, et affunde
Aq. Bullientis, f. ℥viij.
Cum lotio sit frigida, effundatur liquor limpidus, et sæpissime injiciatur paululum inter oculum et palpebras.

* 13. Take Sulphate of Copper,
Armenian Bole, of each eight grains.
Camphor, two grains; mix them, and add
Boiling Water, eight ounces.
When the liquor is cool, pour it off clear, and let a little of it be injected frequently between the eye and eyelids.

our utmost endeavours to subdue the inflammation, we cannot succeed, and that there is great danger of a rupture of the cornea taking place, discoverable by the cornea losing its transparency, and a white ring forming round its circumference. In such cases it will be highly advisable to evacuate the aqueous humour, by making a puncture with a common lancet into the anterior chamber of the eye.

This operation, it appears, has been performed in several instances with perfect safety, and the highest advantage, by Mr. Wardrop,* of Edinburgh, under the like circumstances; and he thinks it probable that the great and immediate relief afforded by it arises chiefly from the sudden removal of tension.

The late Mr. Ware† coincided with Mr. Wardrop on the propriety of puncturing the cornea to evacuate the aqueous humour when a rupture of it is threatened; and he very properly observes, that by suffering this to happen spontaneously, it may take place in such a part of it as afterwards to impede the passage of light, but that, when the opening is made by a surgeon, it may be done in such a place as to obviate any impediment of the kind.

We are informed by Baron Larry,‡ that in order to be secure from ophthalmia in Egypt, it will be necessary to wash the eyes, and, indeed, the whole of the head, frequently with warm water and vinegar; to avoid the direct impressions of light and dust during the day; at night, to be covered from head to foot; to put a bandage over the eyes; to avoid, as much as possible, damp and marshy places; and to keep up the perspiration, and encourage moderate sweating by a use of the Egyptian baths and exercise during the fine season. It will also be necessary to avoid strong liquors, and heating and indigestible aliments; fortifying the stomach by tonics, such as the bitter infusions.

OTITIS, OR INFLAMMATION OF THE EAR.

INFLAMMATIONS of the ear are for the most part unaccompanied by pyrexia, although the sufferings of the patient are sometimes very great; but in some instances they are attended with fever, assume a formidable appearance, coma, delirium, and convulsions supervene, and even a fatal termination has been the consequence.

Otitis is produced by the same causes with other inflammations, but by none more readily than a partial exposure to cold.

In the treatment of this complaint we should proceed on the same principles as in that of ophthalmia. While it is merely a local affection, local remedies alone are necessary, if we except cathartics, for the purpose of dislodging the contents of the primæ

* See vol. iii. of the Edinburgh Medical Journal, p. 56.
† — his Remarks on Purulent Ophthalmia.
‡ ——— Memoirs of Military Surgery.

viæ. Local blood-letting, the application of a blister behind the ear, and of warmth, are the means chiefly to be relied on.

If the pain does not abate, but, on the contrary, should continue to increase, we may expect a suppuration to ensue. This we may then encourage by the application of emollient poultices and warm vapour; and when the abscess bursts, or is opened, we may syringe the ear from time to time with some mucilaginous and gently astringent decoction.

When otitis is accompanied with universal pain diffused over the whole head, fever, delirium, or coma, the most powerful general means are to be combined with the local ones, as recommended in phrenitis.

Suppuration is generally the consequence of these violent forms of the disease, and then the structure of the whole internal ear is often destroyed, the bones being discharged through the meatus auditorius with much purulent and fetid matter. In such cases, the sense of hearing in the ear affected is wholly lost of course.

Fistulous ulcers of the internal ear are now and then the consequence of suppuration, and prove very troublesome.

Ear-ach sometimes continues many days without any apparent inflammation, and is then frequently removed by filling the ear with cotton or wool, wetted with tincture of opium or æther, or even with warm oil, or warm water. Sometimes a pain in the ear is the consequence of association with a diseased tooth, in which case the æther should be applied to the cheek over the suspected tooth, or a grain of opium, with a little camphor, be applied to the tooth itself.

CYNANCHE TONSILLARIS, OR INFLAMMATORY SORE THROAT.

In this complaint the inflammation principally occupies the glands, such as the tonsils; but it often extends through the whole mucous membrane of the fauces, so as essentially to interrupt the speech, respiration, and deglutition of the patient.

It is readily to be distinguished from cynanche maligna by the strength of the pulse, the greater difficulty of deglutition, the absence of ulcers in the throat, and the accompanying fever being synocha.

The causes which usually give rise to it are, exposure to cold, either from sudden vicissitudes of weather, from being placed in a partial current of air, wearing damp linen, sitting in wet rooms, or getting wet in the feet, or coming out of a heated and crowded room suddenly into the open and cool air; all of which may give a sudden check to perspiration. It may also be occasioned by violent exertions of the voice, blowing wind instruments, acrid substances irritating the fauces, and by the suppression of accustomed evacuations. It principally attacks the youthful, and those of a full and plethoric habit; and is chiefly confined to cold

climates, occurring usually in the spring and autumn; whereas the cynanche maligna chiefly attacks those of a weak irritable habit, and is most prevalent in warm climates. The former differs from the latter likewise in not being contagious. In many people there seems to be a particular tendency to this disease, as from every considerable application of cold it is readily induced.

An inflammatory sore throat discovers itself by a difficulty of swallowing and breathing, accompanied by a redness and tumour in one or both tonsils, dryness of the throat, foulness of the tongue, lancinating pains in the parts affected, hoarseness of the voice, a frequent but difficult excretion of mucus, and some small degree of fever. As the disease advances, the difficulty of swallowing and breathing becomes greater, the speech is very indistinct, the dryness of the throat and the thirst increase, the tongue swells and is encrusted with a dark fur, and the pulse is full, hard, and frequent, beating from 100 to 140 in a minute.—In a few cases, small white sloughy spots are to be observed on the tonsils, and in very violent ones there is complete deafness. When the symptoms of cynanche are considerable, the whole face partakes of it, the eyes are inflamed, and the cheeks florid and swelled, respiration is performed with difficulty, and the patient is obliged to be supported in nearly an erect posture to prevent suffocation. Even delirium and coma sometimes supervene. If the inflammation proceeds to such a height as to put a total stop to respiration, the face will become livid, the pulse will sink, and the patient quickly be destroyed.

The chief danger arising from this species of quinsey is, the inflammation occupying both tonsils, and proceeding to such a degree as to prevent a sufficient quantity of nourishment for the support of nature being taken, or its wholly impeding respiration: but this seldom happens, and its usual termination is either in resolution or suppuration. When proper steps are adopted early, it will in general readily go off by the former. Cynanche tonsillaris rarely terminates either in gangrene or scirrhus.

Little fever, free respiration, deglutition not much impeded, the inflammation being of a vivid red colour, universal but gentle diaphoresis, and a copious ptyalism or moderate diarrhœa coming on about the fifth day, are to be regarded as symptoms which denote a termination of the disease in resolution.

When suppuration is likely to ensue, the parts affected become more pale and less painful, a sense of pulsation is felt in them, and there are slight rigors. The suppuration sometimes takes place at the lower part of the tonsils, and then the matter is discharged into the œsophagus, and passes into the stomach, and it is only known to have happened by the immediate relief which the patient experiences. Sometimes, however, it is brought up, and discharged by the mouth, being of a very clotted appearance, often mixed with blood, of a nauseating bitter taste, and fetid smell. The relief experienced by the discharge is often very

remarkable from its suddenness; for the person who a few minutes before was not able to swallow the smallest quantity of any thing, and who breathed with great difficulty, now feels perfect ease, and is able to eat and drink heartily. Sometimes, however, the disease does not terminate by a proper suppuration, but in several small abscesses, which produce trifling superficial ulcers, being of a white or gray colour, similar to aphthæ; whereas those in cynanche maligna are of a dark brown, or black colour. If gangrene is to take place, the parts affected lose their red and shining colour, and from being tense and tumid, they become flaccid, brown, and livid; the pulse, from being strong, becomes small, weak, and irregular; the face assumes a cadaverous appearance; cold clammy sweats break out; the extremities are cold; coma, and symptoms of debility make their appearance, and destroy the patient.

Where cynanche tonsillaris has proved fatal by suffocation, little more than a highly inflamed state of the parts affected, with some morbid phenomena in the head, have been observed on dissection.

In the treatment of this complaint, our first and chief endeavour should be to carry off the inflammation; for which reason an antiphlogistic plan must be pursued. If the inflammatory symptoms run high, the pulse be quick and hard, and the breathing somewhat difficult, twelve or fourteen ounces of blood (supposing the patient to be an adult) ought to be drawn from the jugular vein, in preference to the arm; but if they do not, it will be sufficient to draw blood by the application of several leeches under the ears, particularly on the side most affected. Drawing blood from the tonsils by internal scarifications, is likewise a powerful remedy in this species of quinsey, and when employed with freedom on its first appearance, will greatly tend to abate the inflammation, and prevent a suppuration from ensuing.

At the commencement of cynanche tonsillaris, and before the febrile symptoms are any way violent, the timely exhibition of an emetic often proves extremely useful, and now and then checks its complete formation.

To assist in removing the inflammatory diathesis, gentle evacuation from the intestines, by means of laxative medicines, should be advised occasionally. Saline cathartics, such as the potassæ tartras, sodæ sulphas, or hydrargyri submurias with jalap, may be most proper.

In those cases where the inflammation is considerable, the early application of a blister or cataplasm of mustard round the throat, or to the back of the neck, will most probably be attended with a good effect; but in slight cases it will be sufficient to have these parts rubbed twice or thrice a day with some stimulating embrocation, such as the linimentum camphoræ vel ammoniæ, putting a piece of flannel round them afterwards.

In this complaint it is found of service to wash the mouth and fauces frequently with mild astringent gargles* somewhat acidulated, and likewise to scrape and cleanse the tongue from the fur which is apt to collect on it. Gargles composed of a few grains of the plumbi acetas have sometimes proved highly serviceable in abating the inflammation, when other remedies have failed; but from the general prejudice against the use of this preparation in the form of gargle, lest any of it should happen to be swallowed, it is seldom prescribed.

When white sloughy specks are observed on the tonsils, we may substitute the gargles advised in cynanche maligna for those mentioned here. If a tendency to gangrene should appear, we should immediately have recourse to those of an antiseptic nature, the best of which are composed of cinchona bark, myrrh, and Port wine, or of capsicum and vinegar.—See Cynanche Maligna.

Gargling is the best mode of washing the internal fauces; but its motion is sometimes so painful or irksome, as to prevent the patient from having recourse to it. In such cases, the medicine may be thrown into the fauces by means of a syringe.

Frequently inhaling the vapour arising from warm water mixed with a little vinegar throughout the course of the day, will greatly assist the effects of gargles: and where Mudge's inhaler cannot be procured for the purpose, we must be content to substitute a basin with an inverted funnel over it.

When a febrile disposition prevails, it will be proper to employ diaphoretic medicines, with the view of determining to the surface of the body. Any of those advised under the head of Simple Continued Fever may be used; and to increase their effect, the patient should take frequent small draughts of whey, barley-water, or any other diluting liquor. Neutral salts, as recommended under

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* 1. ℞ Confect. Ros. Gallic. ℥j.
Aq. Bullient. Oss.
Acid. Sulphuric. Dilut. f. ℥j. M. ft. Gargarisma.

Vel,

2. ℞ Decoct. Hordei, f. ℥vj.
Mel. Rosæ, f. ℥j.
Acid. Sulphuric. Dilut. ♏ xxx. M.

Vel,

3. ℞ Aluminis Puri, ℥j.
Decoct. Hordei, Oss.
Mellis Rosæ, f. ℥j. M.

Vel,

4. ℞ Infus. Rosæ Compos. f. ℥vj.
Tinct. Myrrh. f. ℥ss.
Mellis Boracis, ℥iij. M.

* 1. Take Confection of the Red Rose, one ounce.
Boiling Water, half a pint.
Diluted Sulphuric Acid, 1 drachm.
Mix them for a gargle.

Or,

2. Take Barley Water, six ounces.
Honey of Roses, one ounce.
Diluted Sulphuric Acid, forty-five drops.
Mix them.

Or,

3. Take Alum, one drachm.
Decoction of Barley, half a pint.
Honey of Roses, one ounce.
Mix them.

Or,

4. Take Compounded Infusion of Roses, six ounces.
Tincture of Myrrh, half an ounce.
Honey of Borax, three drachms.
Mix them.

the same head, will likewise be proper medicines, and therefore the saline mixture combined with tartarized antimony will answer the purpose.

Where the symptoms run high, the patient ought to be confined to bed. Probably a pediluvium in the evening might have a good effect.

If our endeavours to resolve the inflammation have proved fruitless, and it seems likely to terminate in a suppuration, we ought then to hasten it by the frequent application of warm fomentations and emollient poultices to the throat; and by directing the patient to receive the vapour arising from warm milk and water into the fauces several times a day, in the manner before recommended.

Warm gargles composed of a decoction of figs and barley-water may also be employed, and the best way of using them will be to permit as large a quantity as can conveniently be retained to lie on the part till it cools to the temperature of the mouth. When the matter is formed, if the tumour does not break readily, a lancet may be applied to it.

During this stage of the disease, the passages to the stomach and lungs are sometimes so closed by the size and pressure of the tumour, as to endanger the life of the patient, either by suffocation, or the want of nourishment. In the first case, recourse should be had in proper time to the operation of bronchotomy, in order to keep up respiration; and in the last, the strength must be supported by nutritive and mucilaginous clysters, consisting of animal broths, thick gruel, arrow-root, barley-water, or a solution of starch, which should be thrown up the intestines in a small quantity each time, as they will thereby be absorbed the more readily, and will not be so apt to pass off again, without affording any benefit.

Before we resort, however, to bronchotomy, it may be worthy of a trial to endeavour to break the tumour, either by exciting vomiting, or by making the patient receive through an inhaler the steams arising from warm water, to which a sufficient quantity of æther has been added. The stimulus will prove so great as to succeed in many cases, particularly where the suppuration is nearly completed.

In cynanche tonsillaris every part of the antiphlogistic regimen is necessary, and should be more or less strictly enjoined according to the degree of general excitement. Even where this is not very considerable, all kinds of animal food and fermented liquors must be avoided, and the diet should be light and diluent, consisting of mild vegetable matters, such as roasted apples, boiled turnips, and subacid fruits. Any fresh exposure to cold, even in the slightest cases, ought carefully to be avoided, otherwise the disease may be lengthened out to a great degree, and perhaps terminate in pneumonia.

The tonsils sometimes become affected with permanent swelling

and induration in consequence of an attack of cynanche, giving a good deal of uneasiness to the patient. In some cases the complaint will yield to astringents; but when it does not, and impedes his respiration or deglutition, there can be no impropriety in removing the diseased parts by a piece of wire with a noose at the end of it, or even by a pair of scissors.

CYNANCHE PAROTIDÆA, OR THE MUMPS.

This disease chiefly affects children, but particularly among the lower class of people; is often epidemic, and manifestly contagious.

It is distinguished by an external moveable swelling that arises most commonly on both sides of the neck, but in some instances it is confined to one. These tumours occupy the maxillary and parotid glands; are large, hard, and somewhat painful; and sometimes they attain to such a considerable size, as greatly to impede the powers of respiration and deglutition, giving rise thereby to pyrexia. The swelling usually continues to increase till the fourth day; but from that period it declines, and in a few days more goes off entirely, and then the febrile disposition likewise ceases. As the swelling of the fauces subsides, it not unfrequently happens that tumours affect the testicles in the male sex, or the breasts in the female; but these generally go away in a few days. Sometimes the tumour in the fauces becomes suddenly suppressed, and is not accompanied with the last-mentioned symptom; or if so, this is quickly repressed; in which case the fever becomes very considerable, is attended with delirium, and at length proves fatal. In a few instances where the swelling has been very great, suppuration has taken place in the cellular membrane, and occasioned prodigious deformity; or by bursting inwardly, and discharging its contents into the larynx, has suffocated the patient.

There is, however, seldom much danger from this disease, except when symptoms of contagion in the brain or its membranes arise.

The mumps do not often require the assistance of medicine; and all that is in general requisite is, to keep the head and face warm, to avoid taking cold, and to open the bowels by the mildest cooling laxatives; but should the tumour in the neck suddenly disappear, and the febrile symptoms increase, so as to induce an apprehension that the brain will be affected, it will be advisable to promote and reproduce the swelling by warm fomentations and stimulating liniments;* and to obviate the fatal consequences

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* 1. ℞ Liniment. Ammoniæ Fort. f. ℥j.

Vel,

2. ℞ Spirit. Camphoræ, f. ℥j.
Liquor. Ammoniæ Subcarbonat. f. ℥ij.
Tinct. Cantharidis, f. ℥ss. M.

ft. Linimentum.

* 1. Take Strong Liniment of Ammonia, one ounce.

Or,

2. Take Camphorated Spirit, one ounce.
Solution of Subcarbonate of Ammonia, two drachms.
Tincture of Spanish Fly, half a drachm.

Mix them for a Liniment.

that might ensue from its suddenly receding, by means of venesection, nauseating doses of emetic medicines,* cathartics, and blisters, according to the violence of the disease.

When the testicles become affected and are much swelled, every endeavour should be exerted to prevent suppuration from ensuing, and we are therefore to have recourse to bleeding, both general and topical, cathartics, cooling and discutient applications, and a suspensory bag. Much the same means are to be adopted when, on a retrocession of the tumour in the neck, the female breast becomes indurated and swelled.

CYNANCHE MALIGNA, OR PUTRID SORE THROAT.

THE putrid sore throat is readily to be distinguished from the inflammatory quinsey by the soreness and white specks or aphthæ covering ulcers which appear in the fauces, together with the great debility of the system, a small fluttering pulse, and an eruption on the skin of the same nature with that of scarlatina, which are to be observed in the former; whereas in the latter there is always great difficulty of breathing, a considerable degree of tumour, with a tendency in the parts affected to suppurate, and a hard full pulse. Moreover, in the former disease the inflammation is seated principally in the mucous membrane of the mouth and throat, and the accompanying fever is of the typhoid type; whereas in the latter, it chiefly occupies the glandular parts, and the fever is of the inflammatory kind.

The putrid sore throat often arises from a peculiar or humid state of the atmosphere, and so becomes epidemical, making its attacks chiefly on children, and those of a weak lax habit, principally about autumn and the beginning of winter. It is produced likewise by contagion, as it is found to run through a family, when it has once seized any person in it: and it proves often fatal, particularly to those in an infantile state. In some instances the symptoms of scarlatina and cynanche maligna are so blended together, that it is difficult to say of which disease they partake most: in a practical view this is however of no importance, as both disorders require a similar treatment.

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* ℞ Potassæ Nitrat. ʒj.
Antim. Tartarizat. gr. iss. M.

Et in chartulas vj. divid. quarum, unam dosem sumat 4tis horis.

Vel,

4. ℞ Haust. Salin. f. ℥ jss.

Vini Antimon. Tart. ♏ x.—xv.

Syrup. Cort. Aurant ʒj.
ft. Haustus 3tia quaque hora capiendus.

* 3. Take Nitrate of Potass, one drachm.
Tartarized Antimony, one grain and a half.
Mix them together, and divide them into six papers, of which one dose is to be taken every four hours.

Or,

4. Take Saline draught, one ounce and a half.
Wine of Tartarized Antimony, from fifteen to twenty-two drops.
Syrup of Orange Peel, one drachm.
Make them into a draught, which is to be taken every three hours.

By some physicians scarlatina anginosa and cynanche maligna have however been considered distinct in their nature; but from the observations which I have made, I am induced to look on them merely as modifications of the same disease; for I have noticed it under all its different forms in the same epidemic, and even in the same family from the same contagion.

The putrid sore throat sometimes attends on measles which are of a malignant nature.

Cynanche maligna usually makes its attack with cold shiverings, anxiety, nausea, and vomiting, succeeded by heat, restlessness, thirst, debility, and oppression at the chest; the face looks flushed, the eyes are red, and a stiffness is perceived in the neck, with a hurried respiration, hoarseness of voice, and soreness in the throat; and upon viewing the internal fauces, there appears a fiery redness in every part, with some slight degree of swelling in the tonsils, which, however, is by no means so great as to impede either respiration or deglutition.

The inflammation, after a short time, takes a peculiar termination; for, upon a further inspection into the throat, a number of sloughs of a shade between a light ash colour and a dark brown are to be observed on the tonsils, velum pendulum palati, and uvula; the breath is highly offensive; the tongue is covered with a thick brown fur; and the inside of the lips is beset with vesicles, containing an acrid matter, which, falling on the corners of the mouth and other parts, occasions excoriations. With these symptoms there is likewise a coryza, which pours out a thin acrid matter, excoriating the nostrils. A purging often attends also, particularly in infants, and a thin acrid matter flows from the anus, excoriating this and the neighbouring parts.

From the first attack of the complaint there is a considerable degree of fever, with a small, frequent, and irregular pulse: and every evening there occurs a manifest exacerbation, and in the morning some slight remission, together with debility and general loss of strength. In some cases the brain is affected with delirium of the low muttering kind, or coma.

About the second or third day, large patches of a dark red colour make their appearance about the face and neck, which by degrees become dispersed over every part of the body, even to the extremities of the fingers, which feel swelled and stiff. These eruptions, after continuing for about four days, depart without producing any remission of the symptoms.

The inflammation, as in the cynanche tonsillaris, sometimes spreads along the Eustachian tube to the internal ear, occasioning ulceration, and sometimes wholly destroying its structure. In other cases it extends to the parotid, maxillary, and other glands of the fauces, which become swelled and painful. The whole neck, indeed, sometimes swells, and assumes a dark red colour.

As the sloughs spread, they generally become of a darker colour, the interstices at the same time assuming a purple hue;

new specks arise, and the whole internal fauces are at length covered with thick sloughs, which, when they fall off, discover ulcers sometimes very deeply seated.

In the worst cases, the fauces appear quite black, the sloughs corrode deeper and deeper, and spread throughout the whole of the alimentary tube, so as to terminate at last in gangrene; and the symptoms of irritation continuing to increase, together with a severe purging coming on, the patient is cut off; which event happens usually before the seventh day, and, in some cases, so early as on the third.

Where there is a great increase of the evening paroxysm of fever, with vast debility, depression, or irregularity in the pulse, early delirium, coma, much vomiting, diarrhœa or subsultus tendinum, and these are accompanied with considerable swelling of the throat, and dark-coloured spreading ulcers, with great fetor of breath, petechiæ, or hæmorrhage, the disease will certainly terminate fatally: but where the pulse becomes more moderate and stronger, the respiration freer, the skin soft and moist, the efflorescence copious on the surface of the body, the florid colour begins to return to the fauces, and a better matter to be discharged from the ulcers, with less acrimony in that which flows from the nares, we may expect a favourable termination. In slight cases, where the fever is of a less putrid nature, and the symptoms are moderate, and where the appearance of the efflorescence is succeeded by a remission, and this remission of the fever increases daily in the progress of the disease, we need not apprehend danger.

Cynanche maligna generally arrives at its height about the fifth or sixth day, and in cases which terminate favourably, declines in five or six days. It has, however, been observed to run through its course more slowly in adults than in children. Twenty or thirty of the latter for one of the former are destroyed by this disease; owing most likely to their not being able to wash off the acrid ichorous matter from the throat and fauces by gargling as adults do, and which, by passing down the œsophagus, produces affections of the stomach and bowels, as likewise excoriations about the anus.

It sometimes happens that cynanche maligna appears without any affection or efflorescence of the skin, in the same manner as we meet with scarlatina without any ulceration in the throat: in general, however, the affections of the throat and skin are combined, and seem wonderfully influenced by the state of each other. But while the absence of the sore throat in scarlatina always denotes a favourable prognosis, that of the eruption in cynanche maligna generally affords an unfavourable one.

The eruption in cynanche maligna is seldom uniformly diffused, but comes out in blotches or small points scattered over the trunk and extremities, which are rarely of a florid red, but of a dark purplish or livid hue, and which terminate in but a very scanty

desquamation. As in other eruptive fevers, the eruption in this sometimes suddenly recedes, and an alarming train of symptoms arise. The patient becomes dropsical, the countenance assumes a cadaverous appearance, and convulsions supervene, which terminate in death. The same consequence has ensued on the eruption suddenly assuming a very pale or livid appearance. A florid colour of the eruption, with a uniform diffusion of it over the body, and a copious desquamation, afford a favourable prognosis.

From dissections, it appears, that in this disease the fauces are inflamed, suppurated, and often gangrenous; and that the trachea and larynx are likewise in a state of inflammation, and lined with a viscid fetid matter. In many instances the inflammatory affection extends to the lungs themselves. Large swellings of the lymphatic glands about the neck, occasioned by an absorption of the acrid matter poured out in the fauces, are now and then to be found. The same morbid appearances which are to be met with in typhus gravior present themselves in other parts of the body.

Cynanche maligna, as it differs very much in its nature and appearance from cynanche tonsillaris, differs also very much in its treatment; and this difference depends upon the former being attended with a fever of the typhoid nature, and a strong disposition to gangrene in the ulcerated parts, which prohibit the employment of those antiphlogistic remedies which we find proper and necessary in the latter, and call for others of a very opposite nature.

In the treatment of cynanche maligna, we should abstain from all kinds of bleeding, either topical or general, as it would infallibly prove injurious, by increasing the irritability, and likewise the debility, which naturally are very great. The same precaution is necessary with respect to the employment of active purgatives; and we are sufficiently deterred indeed from the use of them, by observing that a diarrhœa, arising even spontaneously, always does harm, and often proves fatal. The regular expulsion of the fæces is therefore to be solicited by gentle aperients and clysters, and even these are only to be had recourse to when nature is defective. It has often happened in this complaint, that from a want of due attention to this precaution, a cathartic has been followed by a retrocession of the eruption, and a train of the most alarming symptoms. If active cathartics are ever admissible in cynanche maligna, they can only be so at its very commencement, or at the termination of those cases, where although there is a healthy appearance in the throat, with an abatement of all the febrile symptoms, still the abdomen becomes swelled from a collection of putrid colluvies; or glandular obstructions are formed. In such instances a few grains of hydrargyri submurias with rhubarb may be administered with caution.

It has been proposed by Dr. Currie to extinguish the disease in the beginning (as in the first twelve or sixteen hours of its attack)

by the copious affusion of cold water; and in some cases this plan may be adopted with success, equally as in scarlatina. After the affusion, it was Dr. Currie's practice to put the patient into bed, and to give him about eight ounces of wine, if an adult, and so in proportion to children; which plan, it appears, was very successful, for, in fifty out of fifty-two cases, where he had adopted it very early in the disease, he succeeded.

At the commencement of cynanche maligna it has been found of service to give a gentle emetic: wherefore a few grains of ipecacuanha may be taken. It will not fail to bring off a considerable quantity of acrid matter, which, by getting into the bowels, might induce a diarrhœa; an affection to be avoided by every possible means, as always adding to debility, and endangering the life of the patient. During the first four-and-twenty hours, an emetic will in some cases cut short the progress of the disease, and in all it will be likely to break the force of it. At an advanced stage of the disorder, if we still wish or think it proper to evacuate the contents of the stomach, it may be done by an infusion of chamomile flowers, in preference to ipecacuanha.

The grand objects to be kept in view in this malignant disease, should be, to check or counteract the septic tendency which prevails; to wash off from time to time the acrid matter from the fauces, and to obviate debility. Should any particular symptoms arise during its progress which may tend to aggravate the disease, such as diarrhœa, hæmorrhage, &c., they ought to be immediately attended to.

In the year 1785, at which period I was in the West Indies, this disease prevailed in the island of Saint Christopher's, as a universal epidemic among children; and a vast number of them fell martyrs to it, in spite of the utmost endeavours of the profession to save them; when at last the most happy effects were derived from the use of a remedy, the basis of which was Cayenne pepper. The medicine was prepared by infusing two table-spoonsful of this pepper and a tea-spoonful of salt, in half a pint of boiling water, adding thereto the same quantity of warm vinegar. After standing for about an hour, the liquor was strained through a fine cloth, and two table-spoonsful were given every half hour.

The speedy and good effect produced by the use of this medicine in every case in which it was tried, evidently points out the utility of giving warm aromatics, which will bring on a timely separation of the sloughs, as well as other antiseptics, to correct the tendency in the parts to gangrene.

Since the period above mentioned, many practitioners in the United Kingdom have become vouchers for the very beneficial effects which were derived in various instances of cynanche maligna from this medicine. My own experience induces me to speak well of it also.

To assist the effect of the pepper remedy, it will be highly ad-

visable to give the bark of cinchona at the same time, in doses of from two scruples to a drachm, every two hours; and if the inflammatory symptoms do not run high, it may be mixed in a little Port wine. Should the stomach not be able to retain the powder, we may then substitute the extract or strong decoction or infusion of it, adding to each dose about two drachms of the tincture. If the least degree of diarrhœa is produced by the use of the bark, a few drops of the tincture of opium may be added to each dose.

With many children it may be impossible to prevail on them to take the cinchona bark in any form. In such cases it ought to be administered in a clyster. Two drachms of the fine powder may be given in four or five ounces of barley-water, every three or four hours to young children; and about half an ounce, in a proportionate quantity of the liquid, to those of eight or ten years of age. Should the first clyster come away too soon, from five to ten or fifteen drops of the tincture of opium may be added to the subsequent ones. The extract of cinchona may be employed in the same way.

In cynanche maligna, a junction of the muriatic acid with the bark of cinchona, as advised under the head of Typhus Gravior, or of the oxygenated muriatic acid, as noticed under that of Scarlatina, will be very proper. Where we give these acids in considerable doses, it may be necessary to add a few drops of tinctura opii to each, in order to prevent any disagreeable effect on the stomach and bowels from ensuing.

To check the septic tendency in the parts, as well as to remove the acrid matter which is secreted, it will be necessary to wash out the fauces with some proper gargle,* making frequent use of the

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* 5. ℞ Mel. Rosæ, f. ℥j.
Decoct. Hordei, f. ℥x.
Tinct. Myrrh. f. ℥ss.
Acet. Commun. f. ℥j. M.
ft. Gargarisma.

Vel,

6. ℞ Decoct. Cinchonæ, f. ℥vj.
Acid. Muriat. f. ℥j.
Tinct. Cinnam. Compos. f. ℥ss.
——— Myrrh. f. ℥j. M.

Vel,

7. ℞ Decoct. Hordei Compos. f. ℥xij. cui inter coquendum adde
Rad. Contrajerv. Contus. ℥ss.
Liquori colato admisce
Acid. Acetic. Dilut. f. ℥ij.
Tinct. Myrrh. f. ℥j.
Mel. Rosæ, f. ℥ss. M.

* 5. Take Honey of Roses, one ounce.
Decoction of Barley, ten ounces.
Tincture of Myrrh, half an ounce.
Vinegar, one ounce.
Mix these for a gargle.

Or,

6. Take Decoction of Peruvian Bark, six ounces.
Muriatic acid, one drachm.
Compound Tincture of Cinnamon, half an ounce.
Tincture of Myrrh, one ounce.
Mix them.

Or,

7. Take Compound Decoction of Barley, twelve ounces.
Add, during its boiling,
Bruised Contrajerva Root, half an ounce.
To the strained liquour, add
Diluted Acetic Acid, two ounces.
Tincture of Myrrh, one ounce.
Honey of Roses, half an ounce.
Mix them.

pepper remedy in the same manner; but as young children cannot be prevailed on to gargle, it ought to be injected into the mouth and throat with a syringe. After washing the parts in this manner, the steams arising from warm vinegar and water may be received into the fauces by means of an inhaler. Oxygen gas may also be inhaled by adults.

Where there is any difficulty in inducing the patient to sit up in bed to inhale this gas, or we are not furnished with the necessary apparatus, we may substitute the following method, which perhaps may answer equally well. Cause the windows and doors of the person's apartment to be closed, and then taking a chafing dish with some live coals, throw into it half an ounce of purified nitre in powder, which will fill the room with a thick white cloud, that will continue for a considerable time. This process ought frequently to be repeated in the course of the day.

Many judicious practitioners have thought that the greater fatality among children than adults, in such as have laboured under cynanche maligna, is in a great measure to be attributed to their swallowing the morbid secretion from the throat. This, beyond all doubt, induces vomiting, griping pains, and a purging of the worst kind, by causing the complaint to spread along the alimentary tube; and it is very frequently by these affections that children are destroyed. Possibly they might be prevented by removing the acrid matter from time to time by a small sponge fastened to the end of a quill or piece of wood; and by means of another sponge at the other end, the ulcerated fauces may be touched with the remedies best calculated to promote their healing. This mode of proceeding will be the more necessary when gargling is not freely employed.

No force whatever is to be used for occasioning a separation of the sloughs; and if, after a continuation of the gargles for some time, the sloughs should not begin to separate, all that can be done with safety is to touch them with a little alum, or the muriatic acid mixed with honey, &c., applied with a small piece of soft rag, or hair pencil.

When any considerable degree of fever attends, and the skin is very dry, it may be advisable to give small and frequently repeated doses of some diaphoretic medicine; but as antimonials are apt to act downwards, and produce a purging, some caution will be necessary in administering them. To prevent this tendency, they may be combined with a small quantity of the aro-

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Vel,

3. ℞ Extract. Cinchon. ℥j.
Vini Rubr. Generos. f. ℥vj.
Acid. Sulphur. Dilut. ℥j. M.

Or,

6. Take Extract of Peruvian Bark, one drachm.
Port Wine, six ounces.
Diluted Sulphuric Acid, one drachm.
Mix them.

matic confection.* Small doses of the pulv. ipecac. comp. will however be preferable to any antimonial. They may be given with the mistura camphoræ.

Where cynanche maligna is conjoined with scarlatina, we may probably employ a solution of ammoniæ subcarbonas, in the proportion of two drachms to five ounces of water, with some advantage; giving two tea-spoonsful every three or four hours, according to the urgency of the symptoms.

For the purpose of promoting perspiration, the pediluvium has frequently been used in this disease; but at an advanced stage its effects might be too debilitating; and at all periods, if the symptoms run high, the trouble attending its use would not be compensated by any good effect it might have. The pediluvium seems therefore advisable only in those cases where the efflorescence becomes very pale, or suddenly recedes.

Should a diarrhœa arise in the progress of the disease, immediate recourse should be had to some powerful astringent,† to which may be added a use of wine or brandy mulled up with spice. Every possible endeavour should be exerted to put an immediate stop to it, as in every period of the disease diarrhœa is a very dangerous symptom.

Violent vomiting arising in the course of cynanche maligna is to be appeased by the saline medicine in the effervescing state; by opiates joined with camphor, and by applying linen cloths wetted with tinctura opii to the region of the stomach.

It has been usual to apply blisters to the throat in this com-

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* 9. ℞ Pulv. Antimonial. gr. j.—ij.
Confect. Aromat. ℈ss. M. ft. Bolus, tertia hora sumendus.

Vel,

10. ℞ Mistur. Camphoræ, f. ℥ij.
Confect. Aromat. ℥ss.
Vini Antimon. Tart. ♏ xxv.
Aq. Cinnam. ℥iij. M. Capiat cochl. magnum 3tia quaque hora.

Vel,

11. ℞ Pulv. Ipecac. Comp. gr. iij.—vi.

† 12. ℞ Confect. Aromat. ℥j.
Mistur. Cretæ, f. ℥ij.
Aq. Cinnam. f. ℥ijss.
Tinct. Opii, ♏ xx.—xxx.
—— Catechu, f. ℥j. M. ft. Mistura cujus sumat cochl. magna ij. quartis horis.

* 9. Take Antimonial Powder, one grain to two grains.
Aromatic Confection, half a scruple. Make them into a Bolus, to be taken every three hours.

Or,

10. Take Camphorated Mixture, two ounces.
Aromatic Confection, half a drachm.
Wine of Tartarized Antimony, forty drops
Cinnamon Water, three ounces. Of this mixture take a large spoonful every third hour.

Or,

11. Take of Compound Powder of Ipecacuanha, from three to six grains for a dose.

† 12. Take Aromatic Confection, 1 drachm.
Chalk Mixture, two ounces.
Cinnamon Water, two ounces and a half.
Tincture of Opium, from thirty to forty-five drops.
———— Catechu, one drachm. Shake them, and of the mixture give two large spoonsful every four hours.

plaint, particularly when there is any considerable degree of tumour; but they are attended with some danger, as in a few instances where blisters were applied I have observed white specks shortly to arise on the part, which, from the prevailing disposition to putrefaction, have soon degenerated into ulcerations, that have become gangrenous, and at length have destroyed the patient.

It may, however, be attended with a good effect to excite a slight degree of inflammation externally, by applying a cataplasm of mustard moistened with a small quantity of camphorated spirit, or by rubbing the parts with rubefacients, as in cynanche tonsillaris.

A suppression of urine sometimes arises in cynanche maligna, and then it is frequently a symptom of debility. In such cases the necessity of pushing as far as possible the invigorating plan is strongly indicated. Emollient fomentations, or cold applications over the region of the bladder, are the most advisable means for removing this affection; and where the patient has been long costive, some mild clyster may be expedient. When the suppression continues obstinate, the assistance of a surgeon will be necessary to draw off the water with a catheter.

In the last or putrid stage of this complaint, it is not uncommon for a hæmorrhage to break forth from the nose, mouth, or ears, which never proving critical, but, on the contrary, threatening the greatest danger, ought always to be immediately stopped, if possible, by administering strong antiseptics internally, as advised under the head of Malignant Fever, and by the external application of tents dipped in some powerful styptic, such as a solution of cupri sulphas.*

Through the whole course of the disease the patient is to be supported with a sufficient quantity of liquid vegetable nutriment, such as gruel, barley-water, and preparations of tapioca, Indian arrow-root, rice, sago, and panado; and his ordinary drink may consist of wine-whey, or Port wine negus acidulated with orange-juice, or some other acid, either vegetable or mineral.

The quantity of wine allowed must be in proportion to the age of the sick, the violence of the febrile symptoms, the degree of debility that exists, or the tendency that there is to putrescency.

The chamber should be kept sufficiently ventilated, and of a proper temperature, so as not to be too hot, nor at the same time to be so cool as to give any check to the perspiration or efflorescence; and it may be sprinkled several times a day with warm vinegar in which rosemary or some other aromatic herb has been infused. The greatest cleanliness is moreover to be observed in

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* 13. ℞ Cupri Sulphat. ℥jss.
Aluminis, ℥ss.
Aq. Puræ, f. ℥vij.
Alcohol. f. ℥j. M.
ft. Solutio.

* 13. Take Sulphate of Copper, one drachm and a half.
Alum, half a drachm.
Pure Water, seven ounces.
Alcohol, one ounce.
Mix them for a wash.

removing, as soon as possible, whatever is voided by stool; the patient's linen, as also that of his bed, ought frequently to be changed, and the mouth and throat be repeatedly washed and kept clean.

The putrid sore throat being highly contagious, especially among children, it will be prudent, on the first appearance of the disease, to separate the sick from the rest of the family: and in order to destroy the contagion, and render the attendants less susceptible of being infected, it may be advisable to fumigate with the nitric or muriatic acid gases, as advised under the head of Malignant Fever.

The capsicum medicine before mentioned has not only been used in the cure of cynanche maligna, but it has likewise been advised for the prevention of it. By giving the attendants of the sick, and others who may unavoidably be exposed to infection, a tea-spoonful or two every three hours, using it at the same time as a gargle, the preventive effect of the remedy is said to have proved certain. It seems to act by producing and keeping up a regular excitement in the tonsils, uvula, and fauces, and thereby enabling them to resist the sedative effects of the poison which is inhaled.

CYNANCHE TRACHEALIS, OR CROUP.

THE croup is an inflammatory affection of the mucous membrane of the trachea and larynx, excited so high as to stimulate the vessels to throw out coagulated lymph, instead of inducing only an increased and altered secretion, according to the customary action of those membranes. In many instances it extends even to the bronchial ramifications and surface of the lungs, producing an exudation that appears partly in a membranous coating, and partly in fluid resembling pus, and is attended with a peculiar wheezing sonorous inspiration, compared by some to the crowing of a cock, a similar or stridulous sound in coughing and speaking, great difficulty of breathing, thirst, and other febrile symptoms, as likewise by some degree of spasmodic affection. Children are most liable to attacks of this disease.

Some physicians have judged it proper to divide croup into two species, viz. idiopathic, where the disease is primarily and extensively seated in the trachea, bronchiæ, and surface of the lungs; and symptomatic, where it appears as the consequence of some previous disorder, such as the measles, scarlatina, or cynanche maligna, for it has at times been found as the attendant of these complaints. The distinctions into spasmodic and inflammatory must be objected to, as the disease is always to be considered as arising from inflammation.

The croup may be distinguished from acute asthma by the following diagnostics:—in the former, the cough is frequently ringing in our ears, whereas in the latter there is little or no

cough. In croup there is seldom if ever any remission, whereas in the acute asthma it is one of the most striking phenomena of the disease, and it is attended with some evacuation, such as belching, vomiting, or purging. In croup, the pulse is strong, with much febrile heat, the urine high coloured, and the voice shrill and small: in acute asthma, the pulse, although perhaps equally quick, is less full, the urine is limpid, and the voice croaking and deep.

The inflammation in the croup appears of a very peculiar and singular nature. If it was like that met with in common, we might expect to find the same kind of concretion on the surface of the trachea every day, as its mucous membrane is so frequently the seat of inflammation, attended with an increased secretion. The matter, however, of which this substance is formed, possesses different properties from those of the mucus which is thrown out upon the membrane of the nose, or of the trachea, in common catarrhal affections. Most practitioners from thence have been induced to suppose, that the film which we find in the croup is not formed by a secretion from the mucous glands, but is an exudation from the exhalant arteries, and that it is analogous to the inflammatory exudation from the inflammation of other internal membranes, first described by the late Dr. Hunter. Upon this principle we can indeed more easily account for such a film not being found in common catarrhal affections, in which the mucous glands are, perhaps, more the seat of the disease. The opinion now universally entertained is, that the new membrane formed in croup is nothing but coagulated lymph.

The croup does not appear to be contagious, but it sometimes prevails epidemically. It seems, however, peculiar to some families; and a child having been once attacked, is very liable to its returns, at uncertain periods, from any slight exposure to cold; but then its attacks are usually less severe. It is likewise peculiar to children from the age of a year to eight or ten, particularly the ruddy and robust, and has rarely been known to attack a person arrived at the age of puberty.

The application of cold seems to be the general cause which produces this disorder, and therefore it occurs more frequently in the winter and spring, when the weather is stormy and blowing, than in the other seasons. It has been observed to be most prevalent near the sea-coast, where the air is loaded with moisture, and the changes of the weather are sensibly experienced; but it is frequently met with in inland situations, and particularly those which are marshy. It is less known in the temperate than in the northern regions of Europe.

A day or two previous to an attack of the disease, the child appears drowsy, inactive, and fretful; the eyes are somewhat suffused and heavy, and there is a cough, which from the first has a peculiar shrill sound: this, in the course of two days, becomes more violent and troublesome, and likewise more shrill. Every

fit of coughing agitates the patient very much; the face is flushed and swelled, the eyes are protuberant, a general tremor takes place, and there is a kind of convulsive endeavour to renew respiration at the close of each fit. As the disease advances, great difficulty of breathing prevails, accompanied with a swelling and inflammation in the tonsils, uvula, and velum pendulum palati, and the head is thrown back in the agony of attempting to escape suffocation. There is not only an unusual sound produced by the cough, but respiration is performed with a hissing noise, as if the trachea was closed up by some light spongy substance, and thought by some to resemble the sound of a piston forced up a dry pump, or the crowing of a cock. The cough is generally dry; but if any thing is spit up, it has either a purulent appearance, or seems to consist of films resembling portions of a membrane. Where great nausea and frequent retchings prevail, coagulated matter of the same nature is brought up. With these symptoms there is much thirst, an uneasy sense of heat over the whole body, a continual inclination to change from place to place, great restlessness, and frequency of the pulse. Very often the symptoms suffer considerable and sudden remissions and exacerbations.

In an advanced stage of the disease, respiration becomes more stridulous, and is performed with still greater difficulty and some degree of spasmodic affection, being repeated at longer periods, and with greater exertions, until at last it ceases entirely.

The croup is to be considered as a very dangerous disease, and which sometimes will destroy the child quickly by suffocation, induced either by spasm affecting the glottis, or by a quantity of matter blocking up the bronchiæ: but when it terminates in health, it is by a resolution of the inflammation, by a cessation of the spasms, by relief to the dyspnœa, and the voice becoming natural, with a copious and free expectoration of the matter exuding from the trachea, or of the membrane formed there. The unfavourable symptoms are, considerable difficulty of breathing, great anxiety, violent fever, frequent fits of coughing, no expectoration, the voice becoming more shrill, and the pulse irregular and intermitting.

The disease has, in a few instances, terminated fatally within twenty-four or thirty hours after its attack; but it more usually happens, that where it proves fatal, it runs on to the fourth or fifth day. Where portions of the membranous film, formed on the surface of the trachea, are thrown up, life is sometimes protracted for a day or two longer than would otherwise have happened. More than one half of the cases of croup terminate fatally. The younger the patient, the greater will be the danger.

On opening the bodies of children who have died of the croup, it is not unusual to find the lungs in a healthy state; but in some instances they are inflamed on particular points of their surface, and in others, adhesions to the pleura are discovered; oc-

casionally they are found full of dark-coloured blood and serum, and sometimes a quantity of pus is met with. In tracing the bronchiæ throughout their minute ramifications, they are usually found filled with mucus, but which is of a firmer consistence in the trachea, and, as it were, pasted on the surface of the tube, forming a membranous-like concretion, of variable colour and texture. The upper part of the trachea is the most usual seat of deviation from the natural structure; but this is sometimes observed also in the lungs, and extending to the smallest ramifications of the bronchiæ.

It has been, and I believe still is, in a great measure the common opinion, that the inflammatory affection in croup is chiefly confined to the trachea and bronchiæ; but Dr. Baillie,* as well as Dr. Cheyne,† have asserted the contrary, and have given a minute account of several dissections of this disease, wherein the lungs were affected with deep-seated inflammation; and obvious from the firmness of these organs, from their not collapsing when the chest was exposed, and from a kind of purulent matter found within their cells.

From the appearances on dissection, and the symptoms which attend the disease, there can be no doubt but that it is an inflammatory affection of the mucous membrane of the trachea, larynx, and other parts immediately connected therewith, attended by a spasmodic contraction of the muscles in consequence thereof; the treatment ought therefore to be managed accordingly. Whenever the least change is perceived in the voice of children, although it may be doubtful whether the alteration is or is not the result of a different affection, the most scrupulous attention should be paid to the organs of respiration, that proper means of relief may be adopted without delay. In the first or incipient stage of croup, our best and most strenuous endeavours should be exerted to lessen the increased action which prevails all over the mucous membrane of the trachea, larynx, and bronchiæ; and therefore bleeding, emetics, purgatives, and blistering, are to be resorted to. The first thing to be done should be, to take away blood, either from the jugular vein or arm; but a preference is due to the former, proportioning the quantity to the age and habit of the child, and continuing it so as nearly to produce fainting, where the difficulty of breathing is great. Should the symptoms not mitigate from the bleeding, or should they return after a little time, more blood ought to be drawn from the arm, and afterwards if necessary, by applying several leeches immediately over the trachea; but previous, general bleeding should never be omitted in any case. In those which are urgent, active depletion will be necessary.

The use of the lancet has indeed been deprecated by a few practitioners; and the tincture opii, in doses proportionate to the

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* See his Morbid Anatomy, p. 91.

† See Pathology of the Membrane of the Larynx, by J. Cheyne, M.D.

violence of the symptoms, recommended as being likely to give relief as speedily as venesection, or any other remedy. I think bleeding, both general and topical, with other antiphlogistic remedies, ought never to be neglected in the first stage of the disease.

The prompt abstraction of blood at the commencement of croup, in such a quantity as effectually to lower vascular action upon the tracheal surface before it has continued long enough to produce any exudation, or effusion of coagulated lymph, or whatever it may be that constitutes the adventitious membrane, is in my opinion the principal remedy from which any relief is to be derived; and it is only at this period, most probably, that bleeding can be useful.

Immediately after bleeding, it will be proper to apply a large blister all across the throat from ear to ear, keeping up a discharging surface after it is removed, by dressing it with a little of the ceratum sabinæ.

Having adopted these steps, we ought to give a gentle emetic of ipecacuanha, or tartarized antimony, in a dose proportioned to the age of the child, so as to produce sufficient vomiting. Great relief will be afforded by the remedy, in consequence of a considerable quantity of ropy mucus being brought off.

In all cases of the croup the child should be kept nearly upright in bed, to guard against suffocation.

Throughout the whole course of the disease an antiphlogistic regimen will be necessary; and the body should be kept open by the frequent administration of some purgative. Brisk purgatives (in which the submuriate of mercury* may be an ingredient, when the bowels are inactive,) are obviously proper. Their operation may be solicited by occasionally administering clysters.

To assist the expectoration, and promote a determination to the surface of the body, we may employ diaphoretics, such as a few drops of vinum ipecac., or the wine of tartarized antimony. I usually give a preference to the latter, administered every two or three hours in such doses as to excite nausea. To increase the effect of this medicine, a warm bath of between 90 and 100 of Fahrenheit may be used. Possibly moderate doses of the pulvis antimonialis, combined with a small quantity of the submuriate of mercury, might prove very serviceable.

By promptly resorting to the means which have been pointed

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* 1. ℞ Hydrargyri Submur. gr. iij.
Pulv. Jalapæ, gr. iv.—viij. M.
ft. Pulvis catharticus.
Vel,
2. ℞ Pulv. Rhei, gr. vj.
Hydrargyri Submur. gr. ij. M.
ft. Pulvis.

* 1. Take Submuriate of Mercury, three grains.
Powdered Jalap, from four to eight grains.
Mix these together for a purge.
Or,
2. Take Powdered Rhubarb, six grains.
Submuriate of Mercury, two grains.
Mix them.

out, the progress of croup may be frequently averted; but by neglecting these during the first day or two of the disease, and trusting to trifling remedies, thereby suffering the inflammatory action to proceed, the practitioner will be constrained to witness that distress and loss of his patient which promptitude and energy might have prevented; for I think the croup in its early stage is, generally speaking, as much under the control of early and copious bleeding, emetics, purgatives, and other remedies prescribed, as most other inflammatory disorders.

In the course of the disease there is always a lodgment of lymph or mucus in the trachea, and therefore it will be advisable to excite vomiting* once or twice a day, in order that the effused fluid, or adventitious membrane formed thereby, may be dislodged if possible, and brought off.

Inhaling the vapour arising from warm water with a small addition of æther, may possibly prove a good auxiliary, both in lessening the violence of the spasms, and assisting expectoration.

Some cases of this disorder have been successfully treated with the digitalis.† In these the tincture was employed in the dose of five drops, repeated every four hours. Its good effects would appear to depend partly upon its operating quickly and powerfully on the arterial system, and thereby stopping the rapidity of the inflammatory symptoms, and partly on its allaying the spasmodic irritation. I have myself employed it in two or three cases of croup, and with much seeming advantage but I always premised general as well as local bleedings.

After copious depletion, by bleeding both general and topical, vomiting, purging, and blisters, when the inflammatory symptoms have subsided, and the disease seems almost entirely spasmodic, we may venture to give a few drops of the tincture of opium every two or three hours, combined with the wine of ipecacuanha, or that of tartarized antimony, for the purpose of procuring rest and a remission of the spasms. Musk and assafœtida have been recommended as antispasmodics in this disease, but here they are not entitled to our confidence.

From the report of some authors we should be induced to suppose that the croup was a disease of long duration and easy management; as by one we are informed that mercury, employed so as to produce a salivation, effectually cures it: another is confident of the success of a lotion made with spiritus ætheris sulphurici compositus; and a third places his reliance on a decoction of seneka; but such is the celerity of the dangerous symptoms, that

† See Med. and Phys. Journ. vol. iv. p. 20.

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* 3. ℞ Antimon. Tartarizat. gr. ij.
Aq. Puræ, f. ℥ij.
Oxymel. Scillæ, f. ℥ss. M.
Capiat cochl. duo minima subinde ad vomitum promovendum.

* 3. Take Tartarized Antimony, 2 grains,
Pure Water, two ounces.
Oxymel of Squill, half an ounce.
Mix them together, and give two teaspoonsful from time to time until vomiting is excited.

few practitioners have, I think, witnessed a recovery from the croup, where an extravasation of coagulable lymph within the trachea and bronchial tubes had taken place in a high degree.

In one or two mild cases of the disease, hydrargyri submurias has been indeed employed, on the recommendation of Dr. Rush, with some seeming advantage; but as the relief we obtain is always in proportion to the quantity of mucus brought up, it would appear that we should never neglect exciting frequent vomiting, by means of tinctura scillæ, vin. ipecacuanhæ, or wine of tartarized antimony, in order to have recourse to mercury.

Dr. Hamilton, Professor of Midwifery in the University of Edinburgh, is a strong advocate for the use of the submuriate of mercury in the croup. He tells us,* that in every case where he has administered it previous to the occurrence of lividness of the lips and other mortal symptoms, he has completely succeeded in curing the disease. His mode of employing it is, having previously put the child into a tub of water heated to the ninety-sixth degree of Fahrenheit's thermometer, or wrapt it up in a blanket wrung out of hot water, to give it a dose of from one to five grains, according to the age, every hour, till the breathing is evidently relieved; when it is gradually discontinued, allowing at first two, then three, and finally four or five hours to intervene between each dose, according to the state of the symptoms.

The submuriate of mercury, in moderate doses, may be a good remedy in the croup, and by establishing its mercurial influence, may possibly supplant that of the disease; but the Professor's mode of using it to the exclusion of other remedies, such as bleeding, both generally and topically, emetics, &c. (with which it is not incompatible,) I cannot recommend.

Where the child is threatened with suffocation, it will be right to excite sneezing by introducing strong snuff, or the pulvis asari compositus, up the nostrils by means of a quill; as also to excite vomiting by the wine of tartarized antimony, sulphate of zinc or copper, if it can swallow: if not, the fluid may be injected into the stomach by means of Mr. Juke's apparatus, as mentioned under the head of Vegetable Poisons.

The operation of laryngotomy has been proposed as a last resourse in those cases which threaten suffocation; but from the appearances on dissection, it does not seem that success would attend it; for although the upper part of the hardened membranous substance might be extracted by the forceps, still we should not be able to remove the fluid portion which fills the lower part of the trachea and bronchiæ, and which is one of the chief obstacles to respiration.

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* See his Treatise on the Management of Children in early Infancy.

CYNANCHE LARYNGÆA, OR INFLAMMATION OF THE LARYNX.

CYNANCHE laryngæa is of a local nature, is acute, and of short duration, and affects the mucous membrane of the epiglottis, or rima glottidis, or, probably, both of these parts, and in which there exists a high degree of inflammatory action, occasioning impeded deglutition, with difficult respiration. It is only of late that this fatal variety of sore throat has attracted the notice of practitioners, having commonly been confounded with croup. In many cases there may, indeed, arise some difficulty of forming a just diagnosis; but the following peculiarities will greatly assist us.

In cynanche laryngæa the symptoms are, an uneasy sensation in the larynx, difficult and painful deglutition, partial swelling of the fauces, a supervening and perpetually increasing difficulty of breathing, nearly amounting to a sense of suffocation, the voice being extremely hoarse, or reduced to a scarcely audible whisper, attended by inflammatory fever. In cynanche trachealis there is a difficulty of respiration without any swelling of the fauces, or painful deglutition; the expirations, especially in coughing, are very shrill, but the fever in this is also inflammatory.

The usual cause of cynanche laryngæa is exposure to cold, which excites an inflammatory determination to the membrane investing the larynx.

It comes on with chilliness, succeeded by heat and fever, which are soon followed with a hoarseness and indistinctness of voice, laborious respiration and pain, or, as it were, a stricture in the throat threatening suffocation; the pulse is quick and feeble, the eyes are suffused with blood, and somewhat protruding, the countenance has a lived or swollen appearance, the tongue is furred, the tonsils, uvula, and pharynx presenting a dark red appearance on inspection, and any attempt to swallow is succeeded by excruciating pain and difficulty. If the symptoms are not properly attended to, and subdued by an immediate adoption of active and proper means, the patient is destroyed by suffocation.

The morbid appearances to be observed on dissection of those who die of cynanche laryngæa are as follow: the mucous membrane investing the epiglottis and margin of the glottis is inflamed, serum is effused under it, or coagulable lymph on its external surface, by which the rima glottidis is narrowed, or actually closed. Sometimes there has been perceived an accumulation of mucus in the cells of the lungs, with a slight effusion of serum into their reticular texture. In some instances the pleura has been found partially adhered, with more fluid in the cavities than is natural.

To control and manage the disease with success, a timely and active employment of an appropriate treatment is obviously necessary, and this must be directed to the subduing the local inflammation as quickly as possible. In the first stage of the inflammation

(or first four-and-twenty or thirty hours of its commencement), when the patient feels uneasiness in the larynx, with difficult and painful deglutition, we should have recourse to copious blood-letting from the arm in a free stream, (such as from sixteen to twenty ounces if an adult,) repeating the operation on the same day, and nearly to the amount of the same quantity, should the breathing and deglutition not be very considerably relieved. In children of an early age, it will be better to draw blood from the external jugular vein than from the arm; but in adults and others, blood-letting from the arm is to be promptly and boldly employed, repeating the operation as circumstances may require. After bleeding, some active purgative, such as the submuriate of mercury, joined with jalap, or the compound extract of colocynth, ought promptly to be administered; and should it not act quickly and satisfactorily, a cathartic clyster may be injected. The bleeding, as also the purgative, may be repeated the succeeding day, if judged necessary; between the doses of which we may prescribe small and frequently repeated nauseating doses of some antimonial preparation, such as the pulvis antimonialis, or solution of the antimonium tartarizatum, which may be given in combination with a saline mixture and nitrate of potass. Antimonials are valuable medicines in cynanche laryngæa and acute bronchitis, for they not only lessen febrile excitement, by exciting nausea and opening the pores of the skin, but, by their action on the exhalant vessels of the lungs, they promote expectoration, and thus lessen the inflammation of the mucous membrane.

Should the inflammatory action in the parts not be subdued by venesection and purging, we may advise the application of several leeches to the throat, and a large blister to be put on the chest, immediately under the throat. In addition to these means, the frequent use of an inhaler, filled with warm water and vinegar, may afford some relief, as may also gargling. As an auxiliary, we may likewise recommend the semicupium.

Now and then suppuration takes place, and a copious discharge of matter is thrown up by a violent fit of coughing, produced by an effort at deglutition. Where suppuration exists, it might be advisable to excite vomiting, that the abscess may be ruptured and the matter discharged by the mouth as expeditiously as possible, and thereby prevent suffocation.—See Croup.

Where the disease resists our best endeavours, laryngotomy affords the only chance of escape from suffocation, by enabling the patient to breathe, till the inflammation, narrowing the aperture of the glottis, may have time to subside; but this operation should not be delayed too long, as, at a late period, it may afford but little relief; whereas, when performed in an early stage of the complaint, the benefit to be derived from it will be of high importance.

Mr. Bell has lately endeavoured to simplify and improve the operation of laryngotomy. He recommends the incision to be made with a small scalpel through the membranous space betwixt

the thyroid and crycoid cartilages, then to introduce the handle of the knife, and turn it so as to open the slit. This will be sufficient if the occasion be temporary; but if a more permanent gap be required, the four corners left by the incisions may be snipt off.*

CYNANCHE PHARYNGÆA, OR INFLAMMATION OF THE PHARYNX.

THIS differs from cynanche tonsillaris only in the seat of the inflammation.

It is of the same nature, is produced by the same causes, and requires a similar treatment.

PLEURITIS, OR PLEURISY.

PLEURISY is an inflammation of the membrane lining and enveloping the lungs, attended with an acute pain in the side, impeded respiration, fever, and a full, quick, and hard pulse. In some instances the inflammation is partial, or affects one place in particular, which is commonly on the right side; but in general a morbid affection is communicated throughout its whole extent.

The disease is occasioned by exposure to cold, and by all the causes which usually give rise to other inflammatory complaints; and it attacks chiefly those of a vigorous constitution and plethoric habit. In consequence of the previous inflammation, it is apt, at its departure, to leave behind a thickening of the pleura, or adhesions to the ribs, and intercostal muscles which either lay the foundation of future pneumonic complaints, or render the patient more susceptible of the changes in the state of the atmosphere than before.

It comes on with an acute pain in the side, which is much aggravated on making a full inspiration, and is accompanied by flushing in the face, increased heat over the whole body, rigors, difficulty of lying on the side affected, together with a cough and nausea; and the pulse is hard, strong, and frequent, and vibrates under the finger when pressed upon, not unlike the tense string of a musical instrument. If blood is drawn, and allowed to stand for a short time, it will exhibit a thick sizy or buffy coat on its surface, consisting of the coagulable lymph or fibrin.

If the disease is neglected at its onset, and the inflammation proceeds with great violence and rapidity, the lungs themselves become affected, the passage of the blood through them is stopped, and the patient is suffocated; or, from a combination

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* See Surgical Observations, &c. part i. p. 46, by Mr. Charles Bell.

of the two affections, the inflammation proceeds on to suppuration, and an abscess is formed.

The prognostic in pleurisy must be drawn from the severity of the symptoms. If the fever and inflammation have run high, and the pain should cease suddenly, with change of countenance and a sinking of the pulse, great danger may be apprehended; but if the heat and other febrile symptoms abate gradually, if respiration is performed with greater ease and less pain, and a free and copious expectoration ensues, a speedy recovery may be expected. Empyema, or a collection of pus in the cavity of the thorax, is occasionally one of the terminations of pleuritis.

The appearances on dissection are much the same as those mentioned under the head of Peripneumony; viz. an inflamed state of the pleura, connected with the lungs, having its surface crowded with red vessels, and a layer of coagulated lymph lying upon it; adhesions also of the substance of the lungs to the pleura. Besides these, the lungs themselves are often found in an inflamed state, with an extravasation either of blood or coagulated lymph in their substance. Tubercles and abscesses are likewise frequently met with.

In the treatment of pleurisy our chief attention must be directed to the removal of the inflammation, by copious bleedings from the system at an early period of the complaint, taking the pulse for a guide, and giving the age and constitution of the patient proper consideration. While the pulse remains full, hard, and obstructed, the pain in the side acute, the breathing difficult, and the blood drawn off continues to exhibit a sizy crust on its surface when cool, so long ought we to repeat the operation; with this exception, that after a free expectoration has commenced, it will be injurious.

Here it is proper to mention, that physicians have been struck at all times with the effect produced, by taking the blood from a large orifice* in inflammatory diseases; and it is certainly a step which cannot be too strongly urged, but more particularly in pleuritis and pneumonia. It is true, that from a small orifice an equal quantity of blood may be taken as from a large one; but the time of its flowing is so long, that the topical inflammation, which demands for its relief a sudden effect upon the system, is not much influenced by it, though the general strength is greatly reduced, which is an occurrence to be avoided as much as possible in a disease that requires a repetition of the operation.

Pleurisy and peripneumony are complaints in which an early and repeated application of the lancet is usually of the most urgent and indispensable necessity. If blood-letting be had recourse to at a proper period, and to a sufficient extent, (which, of course, must vary according to the symptoms of the disease, and the consti-

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* See Dr. Fordyce's Fourth Dissertation on Fever, p. 50.

tutional habit and age of the patient,) it will seldom fail, with very little further aid, to remove a disease that otherwise might, and not unfrequently does, in a very short time terminate in death.

From the well known power which the digitalis possesses of diminishing the action of the heart and arteries, it possibly may be employed in pleuritis with some advantage after copious general bleedings.

To allay the pain in the side, and take off the inflammation internally, it will likewise be advisable to apply a large blister immediately over the part affected; and to prevent the coming on of a strangury, the patient should be directed to drink plentifully of barley-water in which a small quantity of gum. acaciæ has been dissolved. If it heals up too quickly, and the pain is not relieved by the first, a fresh one ought to be applied as near to the former as possible.

Where the pain is trifling, or the patient cannot be persuaded to submit to the application of a blister, flannel cloths, wrung out in a warm decoction of emollient herbs, or bladders containing warm water, may be applied in its stead.

In pleurisy the application of cold in or near the part affected has occasionally been used with a salutary effect. Nitre, as being a powerful refrigerant, is like to be a useful medicine in pleurisy as well as peripneumony. It may be given in doses of ten grains, repeated every three or four hours.

As strong purgatives are found to determine the flow of blood to internal parts, they are improper remedies to be used in pleurisy; and therefore, when it is found necessary to obviate costiveness on the first attack of the disease, it will be best to do it by means of gentle laxatives, such as the neutral salts and manna, in an infusion of senna, and the body may afterwards be kept open by aperient and emollient clysters, administered so as to procure one or two stools daily.

An early use of diaphoretics, particularly those of the antimonial class (as prescribed under the head of Simple Continued Fever), will be very proper in the cure of pleurisy; as they not only determine the circulation to the surface of the body, but will likewise greatly assist in promoting an expectoration. They ought, however, to be given in such small doses as not to excite vomiting (which might be attended with bad consequences), and to be repeated every two or three hours. To assist their operation, the patient should take frequent small draughts of some tepid liquor, such as barley-water or herb-tea.

The pediluvium, or semicupium, frequently repeated, might prove a good auxiliary.

A free expectoration being the mean which nature usually adopts to relieve herself of this inflammation, it ought therefore to be encouraged by every possible method, such as inhaling the steams arising from warm water and milk, or from a decoction of

emollient herbs, and giving mucilaginous* and oily† medicines frequently throughout the course of the day, as here advised, or recommended under the head of Peripneumony. These will likewise serve to sheathe the throat, and other parts, from the acrimonious mucus which is thrown out, and which provokes frequent fits of coughing.

As opiates evidently tend to give a check to expectoration, they ought, if possible, to be avoided; but if it is absolutely necessary to have recourse to them by the patient being exhausted from the want of sleep, they may then be given, joined with some diaphoretic.‡

Throughout the whole course of the disease the patient is to abstain from animal food, and from all kinds of fermented and spirituous liquors, supporting his strength with gruel, sago, preparations of barley, and such like vegetable productions. On his recovery, he is carefully to guard against any fresh exposure

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* 1. ℞ Mucilag. Gum. Acaciæ, f. ℥iv.
Aq. Fontan. f. ℥ij.
Potassæ Nitrat. ℈j.
Vini Antimon. Tart. ♏ xx.
Syrup. Limon. f. ℥ j. M.
ft. Mistura, cujus sumat paululum subinde, aut tussi urgente.

† 2. ℞ Ol. Oliv. Optimi, f. ℥j.
Mucil. Gum. Acaciæ, f. ℥ij.
Oxymel. Scillæ, f. ℥iij.
Ammoniæ Subcarbonat. ℈j.
Aq. Pulegii, f. ℥iv. M.
ft. Mistura.

Vel,

3. ℞ Ol. Amygdal. Dulc. f. ℥ j.
Syrup. Althææ, f. ℥ss.
Mucilag. G. Acaciæ, f. ℥ij.
Aq. Fontan. f. ℥iij.
Liquor. Ammon. Subcarb. f. ℥ss. M.
ft. Mistura.

‡ 4. ℞ Liquor. Ammon. Acetat. f. ℥ss.
Aquæ Menth. Viridis, f. ℥ j.
Vini Antimon. Tart. ♏ xiij.
Spirit. Æther. Nitrici, ♍ xx.
Tinct. Opii, ♍ xxv.
Syrup. Simpl. ℥ij. M.
ft. Haustus, hora decubitus sumendus.

* 1. Take Mucilage of Gum Acacia, four ounces.
Pure Water, two ounces.
Nitrate of Potass, one drachm.
Wine of Tartarized Antimony, thirty drops.
Syrup of Lemons, one ounce.
Of this mixture, when shaken, take a little from time to time, or when the cough is troublesome.

† 2. Take Best Olive Oil, one ounce.
Mucilage of Gum Acacia, two ounces.
Oxymel of Squill, three drachms.
Subcarbonate of Ammonia, one scruple.
Penny-royal Water, four ounces.
Mix them together, and take a little occasionally.

Or,

3. Take Oil of Sweet Almonds, 1 ounce.
Syrup of Marshmallows, half an ounce.
Mucilage of Gum Acacia, two ounces.
Pure Water, three ounces.
Solution of Subcarbonate of Ammonia, half a drachm.
Mix them.

‡ 4. Take Solution of Acetate of Ammonia, half an ounce.
Mint Water, one ounce.
Wine of Tartarized Antimony, twenty drops.
Spirit of Nitric Æther, thirty drops.
Tincture of Opium, forty drops.
Common Syrup, two drachms.
Mix them for a draught, to be taken on going to bed.

to cold, as a return of the complaint might be attended with worse consequences than the first attack.

It has been mentioned that empyema, or a collection of pus, is one of the terminations of pleuritis: where this happens, and a fluctuation can be perceived, the thorax must be punctured to evacuate the matter. For the mode of performing the operation, see Bell's, or any other work on Surgery.

PNEUMONIA, OR PERIPNEUMONY.

A PERIPNEUMONY, or inflammation of the lungs, is denoted by a difficulty of breathing, obtuse pain in some part of the chest, cough, a frequent full pulse, vibrating under the finger like the tense string of a musical instrument, white tongue, high-coloured urine, and other symptoms of inflammatory fever. The disease is divided into the true and spurious peripneumony. When it arises from sizy blood obstructing the vessels of the lungs, it is called by the former appellation; and when it proceeds from a thick viscid matter producing a similar effect, it is known by the name of the latter. Pneumonia is sometimes met with combined with typhus gravior, (viz. pneumonia typhodes,) and then appears under a different character from its usual one.

The most general cause of peripneumony is, the application of cold to the body, which gives a check to the perspiration, and determines a great flow of blood to the lungs. It attacks principally those of a robust constitution and plethoric habit; hence it is more frequently met with in men than women, and occurs most frequently in the winter season and spring of the year; but it may arise in either of the other seasons, when there are sudden vicissitudes from heat to cold.

Other causes, such as violent exertions in singing, speaking, or playing on wind instruments, by producing an increased action of the lungs, have been known to occasion peripneumony. Severe exercise, external injuries, a free indulgence in the use of fermented liquors, intemperance, repelled eruptions, suppressed evacuations, and metastasis from other diseases, such as gout, rheumatism, &c., may also give rise to it. Those who have laboured under a former attack of this complaint, are much predisposed to returns of it. Pneumonia appears as a symptomatic affection in several diseases, as measles, catarrh, &c.

The true peripneumony comes on with an obtuse pain in the chest or side, great difficulty of breathing (particularly in a recumbent position, or when lying on the side affected), together with a cough, dryness of the skin, heat, anxiety, flushing of the face, and thirst. The pain is prodigiously increased on coughing or making a full inspiration. At the first commencement of the disease, the pulse is usually full, strong, hard, and frequent; but in an advanced stage it is commonly weak, soft, and often irregular.

In the beginning the cough is frequently dry, and without expectoration: but in some cases it is moist even from the first; and the matter spit up is various both in colour and consistence, being often streaked with blood, but at which we need not be alarmed.

If relief is not afforded in time, and the inflammation proceeds with such violence as to endanger suffocation, the vessels of the neck will become turgid and swelled; the face will alter to a purple colour; an effusion of blood will take place into the cellular substance of the lungs, so as to impede the circulation through that organ, and the patient will soon be deprived of life.

Should these violent symptoms not arise, and the proper means for carrying off the inflammation have either been neglected, or have proved ineffectual, although adopted at an early period of the disease, a suppuration may ensue, which event may happen in a few cases during the first week, but more usually in the second, when the disease continues, and is to be known by frequent slight shiverings; by an abatement of the pain, and sense of fulness in the part; by the patient being able to lie with greatest ease on the side which was affected; by a remission of the previous febrile symptoms and accession of hectic, and by the respiration being less painful but more compressed. When the collection of matter has come to maturity, it sometimes bursts into the air vessels, and occasions instant suffocation; in some cases it will be spit up. I have known patients spit up a considerable quantity in this way. This spitting often continues long, and the person falls into a state similar as in phthisis pulmonalis. Sometimes the collection bursts into the cavity of the thorax and produces empyema—rather a hopeless case. Sometimes lymph is effused into the air-vessels, which, by filling up the cells of the lungs, produces suffocation; or being effused into the cavity of the chest, gives rise to hydrothorax; at others, adhesions to the ribs are formed.

Tubercles, or a hardened state of the lungs, have been said to occur in consequence of pneumonia, and in some cases it undoubtedly may be so, but not so often, I believe, as has been imagined. In my opinion, they are more frequently the cause of it, having previously existed in a scrofulous habit. In such cases they give great irritation to the lungs, produce dyspnœa, cough, and congestions, and upon the application of any additional stimulus, pneumonia is apt to be induced.

When peripneumony proves fatal, it is generally by an effusion of blood or lymph into the cellular texture of the lungs, so as to occasion suffocation, which usually happens between the third and seventh day; but it may likewise prove fatal, by terminating either in suppuration or gangrene. The latter is a very rare occurrence.

In those cases where it goes off by resolution, some very evident evacuation always attends it, such as a great flow of urine, with a copious sediment, diarrhœa, mild sweats diffused over the whole

body, or a hæmorrhage from the nose; but the evacuation which most frequently terminates the complaint, and which does it with the greatest effect, is a free and copious expectoration of a thick white or yellow mucus; and by this the disease is carried off in the course of twelve or fourteen days, the pulse gradually abating in its frequency, and the heat of the body, with the other febrile symptoms, disappearing. Cases of pneumonia terminating in health without a free expectoration are very rare.

Our opinion as to the event is to be drawn from the symptoms which are present. A high degree of fever, attended with delirium, much difficulty of breathing, acute pain, a dry cough, or an expectoration of a dark black colour, sudden cessation of pain or of the expectoration, followed by a change or lividness of the lips and of the countenance, and sinking or irregularity of the pulse, denote great danger: on the contrary, an abatement of the febrile symptoms, and of the difficulty of breathing, and pain taking place on the coming on of a free expectoration, or the happening of any other critical evacuation, such as a hæmorrhage from the nose, diarrhœa, or free diaphoresis, the urine at the same time depositing a copious sediment, promise fair for the recovery of the patient. When the inflammation terminates either in suppuration, or an effusion of lymph into the cellular substance of the lungs, or cavity of the thorax, it is always to be considered as highly dangerous.

On dissection the lungs usually appear inflamed, and there is often found an extravasation either of blood or of coagulated lymph in their cellular substance. The same appearances likewise present themselves in the cavity of the thorax, and within the pericardium. The pleura connected with the lungs is also in an inflamed state, having its surface every where crowded with red vessels. Besides these, abscesses are frequently found in the substance of the lungs, as likewise tubercles, and adhesions to the ribs are formed. A quantity of purulent matter is often discovered also in the bronchiæ.

As in many cases of peripneumony the patient is destroyed in the course of a few days by the passage of the blood through the lungs being obstructed, effusion taking place, hæmorrhage of blood ensuing, or the inflammation proceeding on rapidly to a suppuration, the antiphlogistic plan, in its most rigorous extent, ought to be adopted on the very first attack of the disease. A quantity of blood proportioned to the state of the pulse, the violence of the symptoms, and the vigour of the person, (for there is no fixing on the definite quantity,) should be drawn from the arm, taking care to make the orifice large (see Pleurisy); and if the difficulty of breathing and pain are not relieved while it flows, the bleeding should be continued until the patient turns pale and seems likely to faint, as one copious evacuation will be far preferable to repeated small bleedings.

It has often distressed me during the course of my practice,

when called upon for advice in severe cases of pneumonia, to have observed many a life endangered, nay sometimes sacrificed, by a trifling abstraction of blood at the onset of the disease, and which most probably would not have happened had the medical attendant, on first seeing the patient, immediately drawn off a proper quantity.

If a powerful impression is produced by the abstraction of a large quantity at first, the disease is suddenly corrected, and will often, in the course of a few hours, be converted from a most violent pneumonia into a simple catarrh; or, if the result is not so fortunate, the symptoms will become infinitely milder and more manageable, and may even not recur with such violence as to require a repetition of venesection. But the reverse of this picture deserves notice. If blood-letting has been too long deferred, or, from timidity in the practitioner or the patient, not largely employed in the first instance, the disease generally proves violent, tedious, untractable, and often fatal. It appears to be a matter of indifference from which arm the blood is taken away, as the operation is resorted to with the view of removing a stimulus, and not any expectation of causing revulsion.

If the pain and difficulty of breathing continue violent, or return after a short interval (which they are very apt to do when the loss of blood is only trifling,) the bleeding may be repeated the succeeding or even on the same day, and a proper quantity may again be drawn off, as the practitioner, in repeatedly abstracting blood, is not to be guided by the quantity, or even by the appearance of the blood, but by the relief procured. When the inflammatory disposition is subdued, and the difficulty of breathing and pain are not very great (the patient complaining, perhaps, only of a rawness and soreness in the throat,) it will not be necessary to have recourse to the operation a second or third time. It is according to the state of the symptoms, the effect produced upon the heart and lungs, and respiration being freely performed, taking into consideration, at the same time, the appearance which the blood exhibits when cold, that bleeding is to be repeated or not. Until the functions of the heart and lungs are free, we should however, detract blood, whether there be buff or not on it.—After expectoration has freely taken place, it would be improper to bleed.

Where there has been a considerable lapse of time, and the patient is old, or in a weak debilitated state, instead of repeating venesection a second or third time, we may apply several leeches, or the scarificator and cupping-glasses to the chest, immediately over the part which is painful.

To diminish the action of the heart and arteries, it has been proposed in this disease, as well as in pleurisy, to administer the digitalis. In addition to early and copious bleeding, this remedy may probably have a good effect, but it ought never to be relied on alone. Where much systematic debility and pulmonic irritation

prevail, with frequent coughing, difficult respiration, dry, heated skin, and a rapid hard pulse, notwithstanding we have bled freely in the early stage of the disease, we may then give the foxglove, either in the form of powder or tincture. About half a grain of the former, or from fifteen to twenty drops of the latter, may be administered every four hours.

Inflaming the skin immediately over the part affected with pain, by the application of a large blister, is the next proper step to be adopted after bleeding; and should it show a disposition to heal up soon, a fresh one ought to be applied in the vicinity of the other, so as to keep up a constant effect; which mode of proceeding will be far preferable to keeping the blistered parts open with any kind of stimulating ointment, as is often practised. Blisters may be used in any stage of the disease, and in many cases in which blood-letting cannot be carried far enough, or cannot be employed at all; in the peripneumonia notha of old people they prove very beneficial.

Emollient fomentations and cataplasms are sometimes made use of; but they evidently interfere with the application of a more powerful remedy, as a blister cannot be kept on at the same time that they are employed.

If the bowels require evacuation, strong purgatives ought not to be given, but gentle aperients of a cooling nature should be used, particularly at the commencement of the disease. It is a pretty general opinion that purgatives are not proper remedies in pneumonic affection, because copious and frequent purging has a tendency to diminish expectoration, a point of the highest importance: that drastic ones ought not to be administered, is obvious; but, nevertheless, we should not neglect giving those of a mild nature, such as a solution of the sulphate of magnesia, &c., as prescribed below.*

A free expectoration being the means which nature most usually adopts for carrying off the inflammation, we ought, therefore, to promote it as much as possible, by giving such medicines as are supposed to have a power of promoting a secretion from the glands of the throat and bronchiæ; and likewise such as will serve to alleviate the cough, by sheathing the parts against that acrimony of the mucus which gives rise to it. It may be at the option of the practitioner to use any of the forms mentioned below,† or to

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* 1. ℞ Mannæ Optim. ℥iij.
Magnesiæ Sulph. ℥ij.
Infus. Sennæ Compos. f. ℥iss. M.
ft. Haustus catharticus.
Vel,
2. ℞ Ol. Ricini, f. ℥j.

† 3. ℞ Cetacei, ℥ij.
Vitell. Ovi. q. s. ad solut. et adde

* 1. Take Manna, three drachms.
Sulphate of Magnesia, two drachms.
Compound infusion of Senna, one ounce and a half.
Mix them for an aperient draught.
Or,
2. Take Castor Oil, one ounce.

† 3. Take Spermaceti, two drachms.
Yolk of Egg, a sufficiency for solution.

substitute those advised under the head of Pleurisy. To assist their effect, as well as to relax the vessels of the lungs, it will be right to recommend the steams arising from a warm infusion of emollient herbs, such as marshmallow, chamomile flowers, &c., with an addition of vinegar, to be inhaled repeatedly throughout the course of the day. Few auxiliary remedies have proved more efficacious in this disease than the steam of warm water impregnated with vinegar, and copiously inhaled by means of Dr. Mudge's machine.

A common objection made by patients to take medicines containing spermaceti, is, that in the usual way of preparing them the mixture is not smooth and uniform. It has been found, that by first melting the spermaceti, and pouring it into a mortar which had been previously warmed, then adding a sufficient quantity of the yolk of eggs, and afterwards the water, this inconvenience is entirely avoided, and that much less time is required than in the usual way of preparing it.

With the view of assisting expectoration and determining to the surface of the body, we may give antimonials in small nauseating doses, taking care, however, not to excite any vomiting.

Aq. Pulegii, f. ℥iv.
Potassæ Nitrat. ʒj.
Oxymel. Scillæ, f. ʒiij. M.
ft. Mistura.
Cochl. j. pro dos. subinde aut tussi urgente sumendum.

Vel,

4. ℞ Mucilag. Gum. Acaciæ, f. ℥v.

Syrup. Limon. f. ℥j.
Tinct. Tolutan. f. ʒj.

—— Camph. Comp. ʒiij. M.

ft. Mistura.

Vel,

5. ℞. Gum. Ammon. ʒj. solve in

Aq. Puleg. f. ℥v. et adde

Acet. Scillæ, f. ʒiij.
Syrup. Tolutan. f. ℥ss. M.

ft, Mistura.

Vel,

6. ℞ Ol. Amygdal. Dulc.
Syrup. Tolutan. āā f. ℥j.
Cetacei (Gum. Acac. permixt.) ʒij.

Confect. Rosæ Canin. ℥ss. M.

fa. Linctus, de quo sæpe lambat æger.

Then add
Penny-royal Water, four ounces.
Nitrate of Potass, one drachm.
Oxymel of Squill, three drachms.
Mix them, and let a spoonful be taken occasionally, or whenever the cough is troublesome.

Or,

4. Take Mucilage of Gum Acacia, five ounces.
Syrup of Lemons, one ounce.
Tincture of Balsam of Tolu, one drachm.
Compound Tincture of Camphor, three drachms.
Mix them.

Or,

5. Take Gum Ammoniac, one drachm.
Dissolve it in a mortar with
Penny-royal Water, five ounces.
Then add
Vinegar of Squill, three drachms.
Syrup of Tolu Balsam, half an ounce.
Mix them.

Or,

6. Take Oil of Almonds,
Syrup of Tolu, of each one ounce.
Spermaceti (mixed with GumAcacia,) two drachms.
Confection of Dog Roses, half an ounce.
Make them into a linctus, of which let the patient take a little frequently.

With these medicines* it will be proper to direct the patient to take frequent small draughts of some mild diluent liquor, such as barley-water, or thin gruel, to which may be added a little lemon-juice, to give it a pleasing acidity.

Nitre, and some other neutral salts,† will likewise produce a good effect in peripneumony, as well as antimonials, and may therefore be given.

Making use of a pediluvium every evening might probably be attended with much benefit.

After a copious abstraction of blood at the commencement of the disease, it has been proposed by some practitioners to give antimonial powder, nitre, and calomel combined, every three hours or oftener; continuing the medicine assiduously until the constitutional effects of the mercury are evident, when the pulmonic symptoms, it is said, will usually give way. Of this practice I have had no experience, and can therefore form no decisive opinion as to its effects.

After the expectoration has appeared copiously, we should be cautious in promoting purging, as this, as well as blood-letting, would be likely to check it. At this period of the disease it will be right, however, to remove costiveness, by gentle aperients, assisted by clysters.

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* 7. ℞ Pulv. Antimonial. gr. iss —gr. iij.
Confect. Rosæ, gr. x. M.
ft. Bolus, 3tiis horis sumendus.

Vel,

8. ℞ Pulv. Jacob. Ver. gr. iv. pro dos.

Vel,

9. ℞ Antimon. Tartarizat. gr. ij.
Aq. Fontan. f. ℥vij.
Syrup. Rosæ, f. ℥ij.
ft. Mist. cujus sumat cochl. magna ij. tertia vel quarta hora.

† 10. ℞ Succ. Limon. f. ℥jss.
Potassæ Subcarbonat. ℥j.
Aq. Menthæ. Virid. f. ℥j.
— Fontan. f. ℥iij.
Potassæ Nitr. ℥j.
Syrup. Tolutan. f. ℥ss. M.
ft. Mistura, cujus sumat cochl. iij. pro dos. quartis horis.

Vel,

11. ℞ Liquor. Ammon. Acetat. f. ℥iij.
Aq. Puræ, f. ℥x.
Sp. Æther. Nitr. f. ℥ss.
Vini Antimon. Tart. ♏xiv.
Syrup. Simpl. f. ℥j. M.
ft. Haustus, quartis horis sumendus.

* 7. Take Antimonial Powder, one grain and a half to three grains.
Confection of Roses, ten grains.
Mix them into a bolus, to be taken every three hours.

Or,

8. Take James's Powder, four grains for a dose.

Or,

9. Take Tartarized Antimony, 2 grains.
Pure Water, seven ounces.
Syrup of Roses, two drachms.
Of this mixture, two table-spoonsful are to be taken every three or four hours.

† 10. Take Lemon Juice 1 ounce & a half.
Subcarbonate of Potass, one drachm.
Mint Water, one ounce.
Pure Water, three ounces.
Nitrate of Potass, one drachm.
Syrup of Tolu, half an ounce.
Of this mixture the dose may be three table-spoonsfuls every four hours.

Or,

11. Take Solution of Acetate of Ammonia, three drachms.
Pure Water, ten drachms.
Spirit of Nitric Æther, half a drachm.
Wine of Tartarized Antimony, twenty-one drops.
Common Syrup, one drachm.
Mix them for a draught, to be taken every four hours.

At the commencement of pneumonic inflammation opiates would evidently prove injurious by interrupting expectoration, and therefore they should not be prescribed in this stage of the disease; at least, until previous bleeding and blistering have greatly relieved the difficulty of breathing and pain. In a more advanced stage of peripneumony, where a cough is the only urgent symptom, and proves the chief cause either of the continuance of the pain, or of the want of sleep, opiates will be highly useful, and may therefore be given, combined with the pectoral medicines before advised, or in the form of a draught* to be taken about bed-time.

In pneumonia, where the patient has become much exhausted from the effects of the disease, and bleeding has been carried to the full extent that the safety of the patient will admit of, the Prussic acid may be productive of very good effects; the pulse will be lowered, and totally changed as to character, and the cough much relieved.† For the mode of administering it, see Phthisis.

During the whole of the complaint the patient should be confined to bed, lying with his head and shoulders as much elevated as possible: his chamber is to be kept of a proper temperature, neither below 50 nor above 60 degrees of heat; and his strength supported with food of a light nutritive nature, such as roasted or boiled apples, panado, &c. His drink should be thin gruel and barley-water, sweetened with honey, or a decoction of liquorice, in which a small portion of currant jelly is dissolved, to give it a pleasing tartness. On recovering he should carefully guard against any exposure to cold, or any irregularity which might occasion a relapse; for no inflammation is so apt to recur as the pneumonic, and a return of it might lay the foundation of phthisis pulmonalis.

If, in consequence of the violence of the disease, an effusion of lymph takes place, and hydrothorax ensues, the means advised under this head must be employed. If suppuration or empyema is the termination, and we cannot evacuate the matter in any other way than by having recourse to the operation of paracentesis, this should be performed in due time. It is stated in a late Number (viz. 280) of the Medical and Physical Journal, by a practitioner of respectability, that he has discovered a means whereby it may be ascertained to a certainty when the inflammatory stage has ceased, and the purulent commenced; which is as follows: Place

† See Observations on the Internal use of Prussic Acid in Pulmonary Diseases, by A. B. Granville, M.D.

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* 12. ℞ Liquor. Ammon. Acetat. f. ℥iij.
Aquæ Menth. Virid. f. ℥j.
Tinct. Opii, ♏xxvij.
Syrup. Tolutan. f. ℥ij.
Vini Antimon. Tartarizat. ♏xij. M.
ft. Haustus.

* 12. Take Solution of Acetate of Ammonia, three drachms.
Mint Water, one ounce.
Tincture of Opium, forty drops.
Syrup of Tolu, two drachms.
Wine of Tartarized Antimony, eighteen drops.
Mix them for a draught.

a hand upon each side of the chest, and at the same time direct the patient to articulate. If the inflammatory stage is still going on, a peculiar jar or vibration will be felt by the hands. If an abscess has formed, no such sensation will be experienced. If only one side is affected, the motion will be lost on that side, and distinctly felt on the other. In empyema the vibration is also lost. The peculiar sensation alluded to may be perceived by any person placing a hand on each side of the chest, the patient at the same time coughing or speaking.

A severe and well-marked case of pneumonic inflammation, terminating in suppuration, came under my observation a few years ago, and in which the fluctuation was distinctly heard on any motion of the patient. The operation was performed with much skill and dexterity by Mr. Davis, of Andover, with the common scalpel, and fifty-two ounces, by admeasurement, of good pus, were drawn off. For upwards of five weeks there was a daily and free discharge of matter, and the prospect was pleasing; but at length the patient sunk under the disease. The body was not inspected; but as nearly a pint of pus had been thrown up from the mouth a few days prior to the performance of the operation, I have every reason to suppose the substance of the lungs had then suffered too material injury to have admitted of his recovery.

There are indeed but few cases on record of paracentesis of the thorax terminating favourably; but in vol. ii. of the Transactions of the Association of the Fellows and Licentiates of the King's and Queen's College of Physicians in Ireland, one is noticed, wherein eleven pints of an inodorous fluid resembling whey were gradually drawn off. For some days after the operation, the discharge from the orifice amounted to nearly two pints in twenty-four hours, of the same kind of fluid, but it gradually lessened. The patient's breathing became free, the lividity of countenance disappeared, his appetite mended, he daily gained flesh, in a few weeks he was able to walk and ride, and his cough had nearly subsided. In four months all discharge nearly ceased, and tolerable good health was afterwards enjoyed for some years.

In pneumonia typhodes, the general plan of treatment should be a combination of that of typhus with the local treatment of pneumonia. Bleeding from the system might prove injurious, unless employed at the onset of the disease; and where the debility has been great, there are instances on record, in which even topical blood-letting, by means of scarifications of the side, in this complaint has become so obstinate and profuse as to baffle every attempt to stop it till the patient expired. Dry cupping, together with fomentations, cataplasms, and rubefacient liniments applied over the part, will be far more advisable in an advanced stage; the person at the same time drawing in with the breath watery vapours repeatedly throughout the day and night, by means of an inhaler. When there is a tendency to gangrene and hæmorrhage, blisters would be improper, both on account of the evacuation

which they occasion, and because they sometimes give rise to dangerous sores.

In this species of disease every thing that might derange the primæ viæ should be guarded against. The presence of noxious matter in these passages often has, however, a share in producing pneumonia typhodes, and in such cases clearing the alimentary canal ought to form an essential part of the treatment; but as the operation of cathartics would be too debilitating, and it seems very generally admitted that the chief cause of irritation is in most instances lodged in the stomach, it would appear that an emetic will be the best means of removing it. To avoid exciting purging, instead of vomiting, which would be certain to prove prejudicial, we should prescribe ipecacuanha in preference to any antimonial emetic.

When the skin is very dry and hot, saline draughts, or the liquor ammoniæ acetatis, may be administered with advantage. To allay pain, ease the cough, stop diarrhœa when it arises, or procure sleep, we may employ opium.

To support the vital powers, and resist the tendency to putrescency, it will be right in all cases of this species of pneumonia to allow a moderate use of wine, proportioning the quantity to the degree of debility which is present. If the inflammatory symptoms do not run high, and the fever shows any tendency to remit, we may add a joint use of a decoction of the bark of cinchona.

When we have succeeded in removing the symptoms of pneumonia typhodes, and the patient has advanced to the state of convalescence, it will be necessary to have recourse to bitters and aromatics, in order to strengthen the stomach and system in general.—See Dyspepsia.

PERIPNEUMONIA NOTHA, OR SPURIOUS PERIPNEUMONY.

This disease commonly makes its attack on those who are somewhat advanced in life, especially such as are of a phlegmatic habit, or who have had frequent catarrhal affections; and, like the other species of peripneumony, is occasioned by cold, being most prevalent in the autumn and spring, or when there are frequent vicissitudes of the weather from heat to cold.

It comes on usually with alternate chills and heats, flushings in the face, pain and giddiness in the head, a sense of lassitude over the whole body, difficulty of breathing, great oppression at the chest, with obscure pains there, together with a cough, accompanied by some degree of expectoration, and often with a throwing up of a considerable quantity of viscid mucus.

Spurious peripneumony is sometimes so slight as to resemble only a violent catarrh, and after the employment of a few proper remedies, goes off by a free and copious expectoration; but some-

times the symptoms run high, and an effusion of serum into the bronchia takes place, which destroys the patient.

If advice is applied for at an early period of the disease, and there is great difficulty of breathing, with much pain, it will be proper to bleed, in order to facilitate the circulation of the blood through the lungs; but where these do not prevail, we need not have recourse to the lancet, for much harm may be done by inducing a considerable degree of debility unnecessarily, as the disease principally attacks elderly people, and such as are of a phlegmatic habit.

To relieve the difficulty of breathing, and oppression at the chest, it will be advisable to apply a large blister immediately over the part affected; after which, if there is any nausea present, we may prescribe a gentle emetic; but if there is not, we may be content with giving small doses of antimonials, as advised in the true peripneumony, to promote a perspiration: and in order to keep up a constant effect, they should be repeated every two or three hours, the patient drinking plentifully, at the same time, of tepid liquors.

These means having been adopted, we ought then to give pectoral medicines, combined with squills, as recommended under the head just mentioned.

If costiveness arises in the course of the disease, it must be removed by emollient clysters, or gentle laxatives, such as manna, potassæ supertartras, magnesiæ sulphas, &c.; taking care to avoid strong purgatives, which would be hurtful, by inducing a state of debility.

Through the whole course of the disease an antiphlogistic regimen will be most proper. Where great debility prevails, or the patient has long been accustomed to a free use of fermented liquors, a small quantity of wine will be admissible.

Considering bronchitis as only a milder species of pneumonic inflammation, and requiring somewhat of a similar treatment with cynanche laryngæa and pneumonia, I have not thought it necessary to notice it under a distinct head; but a late writer* has looked upon it as deserving of a separate investigation.

With respect to carditis, or inflammation of the heart; pericarditis, or inflammation of the pericardium; and diaphragmitis, or inflammation of the diaphragm; they are on many occasions scarcely to be distinguished from pneumonia, and probably are usually combined with it. Happily the treatment which has been recommended in pneumonia is equally suited to these inflammations, with this difference, however, that as the parts affected are immediately necessary to life, the means or cure must be employed with promptness and diligence.

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* See the Treatise on Bronchitis by Dr. Badham.

GASTRITIS, OR INFLAMMATION OF THE STOMACH.

THIS disease is divided into two species; the phlegmonous, and erysipelatous: but it is the former which is here to be treated of, the latter arising chiefly towards the close of other diseases, marking the certain approach to dissolution, and being unaccompanied with any marks of general inflammation, or by any burning pain in the stomach.

Phlegmonous gastritis is produced by acrid substances of various kinds, such as arsenic, oxymuriate of mercury, alkalies, the oxalic and mineral acids, &c., taken into the stomach, as likewise by food of an improper nature, by potations of spirituous liquors, by taking large draughts of any cold liquor when the body is much heated by exercise, dancing, &c.; by external violence from wounds, blows, &c., and by repelled exanthemata and gout. Besides these, it may arise from an inflammation of some of the neighbouring parts, as the liver, intestines, &c., extending to the stomach.

Phlegmonous gastritis is readily to be distinguished from any other disease, by the burning pain, heat, and tension in the region of the stomach; by the aggravation of that pain when any thing is swallowed, with the immediate rejection of it; and by the sudden and greater depression of strength in this than in any other inflammation. Indeed enteritis is the only disease it can be confounded with: and from this it may easily be discerned by the seat of pain on pressure with the hand. Gastritis is a rare disorder.

The symptoms which attend it are, a violent burning pain in the region of the stomach, with great soreness, distention, and flatulency, a severe vomiting, especially after any thing is swallowed, whether it be liquid or solid, most distressing thirst, restlessness, anxiety, and a continual tossing of the body, with great debility, constant watching, delirium, and a quick, hard, and contracted pulse. In some cases a severe purging attends.

If the disease increases in violence, symptoms of irritation then ensue; there is great loss of strength, with faintings, a short and interrupted respiration, cold clammy sweats, hiccups, coldness of the extremities, an intermitting pulse, and the patient is soon cut off.

The event of gastritis is seldom favourable, as the person is usually either suddenly destroyed by the violence of the inflammation, or else it terminates quickly in suppuration, ulceration, or gangrene. Perhaps it may sometimes occasion scirrhosity of the pylorus.

If the symptoms are very mild, and proper medicines have been employed at an early period of the disease, it may, however, terminate in resolution, and that in the course of the first, or, at farthest, the second week. The pulse becoming more soft and full about the fourth day, and diminishing in frequency; the pain

gradually ceasing; the urine depositing a sediment; or diarrhœa supervening; are to be regarded as favourable symptoms.

Its termination in suppuration may be known by the symptoms, although moderate, exceeding the continuance of eight or ten days, and a remission of pain occurring, whilst a sense of weight and anxiety still remain, and on the formation of an abscess, cold shiverings ensue, with marked exacerbations in the evening, which are followed by night-sweats, and other symptoms of hectic fever; and these at length prove fatal, unless the pus is thrown up by vomiting, and the ulcer heals.

Its tendency to gangrene may be dreaded from the violence of its symptoms not yielding to proper remedies early in the disease; and when begun it may be known by the sudden cessation of the pain; by the pulse continuing its frequency, but becoming weaker; and by delirium, with other marks of increasing debility, ensuing.

In consequence of previous inflammation, a scirrhosity of the pylorus is sometimes induced, but unfortunately we know of no symptoms which are characteristic of it. Nausea and vomiting soon after taking food, and very obstinate costiveness, are usually present. When it has ulcerated, and formed what is called cancer, there is generally an eructation of very fetid air, and a frequent vomiting of dark-coloured mucus, which is offensive. The pain is constant, though varying in degree: it is increased by taking an acrid or acid substance into the stomach; whereas mild fluids, such as milk, gruel, &c., occasion little or no uneasiness; and this circumstance may help to distinguish it from that pain which is occasioned by mere distention, for there the pain equally follows, whatever is the food taken.

Sometimes adhesions are formed between the stomach and neighbouring viscera.

Fatal cases of this disease show on dissection a considerable redness on the inner coat of the stomach, having a layer of coagulated lymph lining its surface. They likewise exhibit a partial thickening of the substance of the organ at the inflamed part, the inflammation seldom extending over the whole of it. Where ulceration has taken place, the ulcers sometimes are found to penetrate through all its coats, and sometimes only through one or two of them.

The cure of gastritis is to be attempted by copious and repeated bleedings, employed at an early period of the disease, not regarding, or being intimidated by the smallness of the pulse, as it usually becomes softer and fuller after the operation; nor by extreme debility, syncope, or convulsions, for all these are the effects of the disease. Draw off blood, therefore, every four or six hours, in such a quantity each time as the action of the heart will bear, and continue the practice as long as the characteristic symptoms of inflammatory disease remain. After venesection, topical bleeding, by means of several leeches over the stomach,

or scarifying and cupping, may also be immediately adopted, if necessary. A large blister may next be applied to the region of the stomach, and the cure be assisted by fomentations of the whole abdomen, as well as by the frequent administration of emollient and laxative clysters. A warm bath will prove highly beneficial. Pediluvia may also be used.

The irritable state of the stomach prevents any kind of medicine from being received into it: and it is only after the violence of pain and the frequency of vomiting are somewhat abated, that we can venture to administer opiates, even in the form of clysters. When the disease is in some measure subdued, opium may be given in this way.

To sheathe the stomach, particularly in those cases where the inflammation has been occasioned by any acrid matter received into it, we should advise the patient to take frequent small draughts of some mild diluent drink, such as chicken-broth, linseed-tea, or barley-water, in which may be dissolved a small quantity of gum acacia.

When we know the nature of the offending matter, specific correctors may be thrown in: thus, when it is an alkali, vegetable acids, or the mineral ones properly diluted, should be given. When it is an acid, an alkali sufficiently diluted ought to be administered. If it is the oxymuriate of mercury or arsenic, the subcarbonate of potass properly diluted, (see Mineral Poisons,) will be advisable. It has been discovered that gelatine when mixed with corrosive sublimate, renders it innocuous. In all cases of poison by this drug, gelatine, either fresh or dry, ought to be resorted to and may be relied on. When the poison is of the vegetable class, the remedies recommended under this particular head must be given.

In gastritis the antiphlogistic regimen should be observed with the greatest strictness respecting diet, both during the disease and for a considerable time afterwards: when the patient comes to be able to retain any kind of food, nothing must be given but what is of the lightest and most aperient nature. It should also be in small quantity at first, and every thing hard or acrid be avoided. The legs and feet ought at the same time to be kept warm, as the application of cold to them is apt to affect the stomach.

The tendency to suppuration is to be obviated by pursuing the steps which have been mentioned; and when it has actually taken place, must be left to nature, only avoiding all irritation. To allay pain and irritability of the stomach, opium may be administered in small doses.

A gangrene is likewise to be obviated by the means which have been advised. When it takes place, it admits of no relief from medicine.

Where either scirrhosity or cancerous ulceration of the pylorus has ensued, only a temporary relief can be expected. In the former, small doses of the submuriate of mercury, conjoined with

hemlock, together with a milk diet, may be most proper: in the latter, opium, extractum conii, and hyoscyamus, with a similar diet, may be tried.

ENTERITIS, OR INFLAMMATION OF THE INTESTINES.

THIS, as well as gastritis, is of two species, viz. the phlegmonous and erysipelatous; the latter of which, arising only in consequence of some other disease, is not here to be noticed.

Pungent pain in the abdomen, spreading and acute round the umbilicus, nausea, vomiting, obstinate costiveness, and pyrexia, are the characteristics of enteritis.

The only disease with which enteritis can be confounded is colic; but from this it may readily be distinguished, as the former is accompanied with fever, and a quick and hard small pulse, and the pain is increased on pressure, which does not occur in colic.

The causes of enteritis are much the same with those of gastritis, being occasioned by acrid or irritating substances, indurated fæces, acrid bile, long contined and obstinate costiveness, spasmodic colic, intus-susception, and a strangulation of any part of the intestinal canal; but another very general cause is atmospherical vicissitude, or the application of cold to some part of the skin during or subsequent to a state of perspiration. It is also occasioned by cold drink of any kind taken when the body is heated, in the same way as inflammation of the stomach is apt to arise therefrom.

Enteritis comes on with an acute pain, extending in general over the whole of the abdomen, but more especially round the navel, which is greatly aggravated on pressure; accompanied with eructations, sickness at the stomach, a vomiting of bilious matter, obstinate costiveness, thirst, heat, great anxiety, and a quick and hard small pulse. After a short time the pain becomes more severe, the bowels are affected with slight spasms, the whole region of the abdomen is highly painful to the touch, and seems drawn together in lumpy contractions; invincible costiveness prevails, and the urine is voided with great difficulty and pain.

The inflammation continuing to proceed with violence, terminates at last in ulceration, scirrhus, or gangrene; or it goes off by resolution.

Enteritis is always attended with considerable danger, as it often terminates in gangrene in the space of a few hours from its commencement: this event is marked by a sudden remission of pain, sinking and irregularity of the pulse, shrinking of the features, cold sweats, syncope, suppression of urine, hiccup, and distention of the belly, which sounds on being struck with the finger; and it frequently proves fatal likewise, during the inflammatory stage. If the pains abate gradually, if natural stools be

passed, if a universal diaphoresis, attended with a firm equal pulse, comes on, or if a copious discharge of loaded urine, with the same kind of pulse, takes place, a resolution and favourable termination may be expected.

Its termination in ulceration, which is not common, can only be known by the febrile symptoms remitting; by occasional pains and rigors; and by pus being mixed with the evacuations from the bowels.

Dissections of this disease show that the inflammation pervades the intestinal tube to a very considerable extent; that adhesions of the diseased portion to contiguous parts are often formed; and that, in some cases, the intestines are in a gangrenous state, or that ulcerations have formed. They likewise show, that besides obstinate obstructions, intus-susception, constrictions, and twistings, are often to be met with; and that in most cases the peritoneum is more or less affected, and is perceived at times to be covered with a layer of coagulable lymph. The mesentery and omentum are also found much inflamed.

The cure of enteritis must be on the same general plan as in other cases of inflammation, being directed to lessen the impetus of the blood, and remove the obstruction from the intestines.

On the first coming on of the disease it will be necessary to have recourse to copious bleeding, which may be repeated according to the severity and violence of the symptoms, and the age and strength of the patient. Blood should be drawn from the arm in a full stream, by means of a sufficient orifice, as quickly after the pain is felt in the bowels as possible, regardless of the *apparent* debility in the pulse and patient; and it is, perhaps, of more importance in this than in any other inflammation, that the great object of venesection should be obtained by the first bleeding; for if the inflammation is not quickly subdued, mortification rapidly advances. If the object in view should not be obtained by one copious bleeding, the operation must be repeated within four or five hours again, and to such an extent as the circumstances of the case require, and that the action of the heart will bear. A third bleeding will be advisable the same or on the succeeding day, should the pain in the abdomen, and other characteristic symptoms of inflammation, remain unsubdued.

After plentiful venesection, topical bleeding, by means of several leeches applied to the abdomen, may be advisable in some cases. These steps being taken, the application of a large blister to the abdomen, or upper part of each thigh, (see Peritonitis,) will be proper. In bowel complaints of the West Indies it is often found that the most powerful purgatives will produce no effect until a blister be applied, and that as soon as it begins to rise they then commence to operate.

To assist in relieving the pain and gripes, we may recommend warm fomentations to be applied to the abdomen, and emollient

clysters, blended with aperients,* to be frequently injected. A clyster, composed of a solution of soap, by dissolving any lumps of feculent matter, will sometimes procure stools when an enema of another nature fails.

When the vomiting and nausea are abated, we may venture to give some cathartic medicine† by the mouth. In enteritis, attended with constipation, the submuriate of mercury, given in the dose of ten or fifteen grains, with a small quantity of cathartic extract, and made into little pills, may perhaps be the best purgative we can employ. Where this and other purgatives fail in producing the desired effect after a free use of the lancet, a trial may be made of the croton oil, in the dose of two drops on a bit of sugar, or with a little of the crumb of bread formed into a pill. Where, from there being great irritability of the stomach present, medicine in any quantity or bulk cannot be retained on it, this active cathartic may be productive of advantage, if other symptoms do not contra-indicate its use. To relax the spasm, and thereby remove one of the principal impediments to the cure, an emollient laxative clyster may be administered from time to time during the administration of purgatives. Tobacco clysters are sometimes used, but they are very apt to produce nausea and vomiting, and if not cautiously employed, may wholly extinguish life.

In all cases of enteritis, purgative medicines are certainly essential to the plan of treatment; but bleeding, although considered as of the greatest importance, is not always employed so as to produce a powerful impression upon the system at large. Our attention should always be directed principally at first to the subduing of the inflammation by repeated large venesections on the very onset of the disease; aud afterwards by local bleeding, succeeded by the application of a blister to the abdomen: and when we have effected this object, we may then resort to purgatives to remove the constipation. This latter being the effect, and not the cause of the disease, should not be the symptom first attended to.

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* 1. ℞ Infus. Sennæ Comp. f. ℥xj.
Sodæ Sulphatis, ℥ j.
Ol. Ricini, f ℥ss. M.
ft. Enema.

† 2. ℞ Ol. Ricini, f. ℥ j.
Aq. Menth. f. ℥ss.
Tinct. Jalap. f. ℥ss. M.
ft. Haustus.

Vel,

3. ℞ Infus. Sennæ Comp. f. ℥jss.
Tinct. ejusdem, f. ℥j.
Magnes. Sulphat. ℥iij.
ft. Haustus.

* 1. Take Compound Infusion of Senna, eleven ounces.
Sulphate of Soda, one ounce.
Castor Oil, half an ounce.
Mix them for a clyster.

† 2. Take Castor Oil, one ounce.
Mint Water, half an ounce.
Tincture of Jalap, half a drachm.
Mix them for a draught.

Or,

3. Take Compound Infusion of Senna, one ounce and a half.
Tincture of the same, one drachm.
Sulphate of Magnesia, three drachms.
Mix them for a draught.

It is indeed too much the custom to have recourse to active purgatives at the very commencement of enteritis, and this too in very considerable doses—a practice which cannot fail to prove highly prejudicial. The intention is to evacuate the bowels; but it should be considered that purgatives empty the intestinal canal by means of their specific stimulus, which increases the secretions, and quickens its peristaltic motion: let it also be recollected, that the bowels are already excited to the utmost: that they are in, or at least tending to, a state of high inflammation, and that no pathological fact is better ascertained, than that excessive excitement destroys secretion; that by applying stimulants to an inflamed membrane, every secretion which it was wont to pour out, is locked up.

In enteritis, as well as peritonitis, the warm bath is often made use of; but by some practitioners its effects have been considered as somewhat doubtful, if not hurtful, until the inflammatory action is checked by general and local bleedings, together with purgatives. Cloths wetted in cold vinegar and water, applied over the whole surface of the abdomen at short intervals, have been attended, in some cases of peritoneal inflammation, with the best effects, after fomentations with warm water and warm bathing have failed.

Opiates are used by many practitioners in the early stage of this complaint, where the stomach is in a very irritable state, and much vomiting prevails; but it is obvious that they must prove injurious, and ought therefore not to be employed, at least not before sufficient evacuations by bleeding, as well as by laxatives or emollient aperient clysters, have been premised. Until the obstruction is removed by evacuations, the stimulus of opium might be likely to increase the action of the vessels. When it is given by the mouth it should always be joined with some cathartic.*

Whatever is given to the patient as aliment should be of the most mild diluent nature, such as barley-water, beef-tea, and chicken-broth; and these ought to be taken sparingly, and only in small quantities at a time, until some evacuation has been procured; as much food forced against the obstruction must necessarily increase the irritation, and of course aggravate all the symptoms. The strictest adherence to the antiphlogistic regimen must be enjoined.

When the disease is combined with spasmodic colic, the means recommended under that head must be pursued.

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* 4. ℞ Hydrargyri Submur. gr. v.
Extract. Colocynth. C. gr. viij.
Opii, gr. ss.—j.
Fiant pilulæ iij. pro dos.

* 4. Take Submuriate of Mercury, five grains.
Compound Extract of Colocynth, eight grains.
Opium, from half a grain to one grain.
Mix these into three pills for a dose.

In severe obstructions of the intestinal tube, accompanied by obstinate constipation, and where purgatives fail in procuring motions, it has been a common practice to have recourse to quicksilver in considerable quantity, and no doubt it will find its way through the intestinal tube in most instances merely by its gravity; but in cases of enteritis, where there is intus-susceptio, or it is combined with hernia of any species, this remedy cannot fail to prove highly injurious.

As enteritis is very apt to recur from slight causes, the greatest circumspection will be requisite after recovery. Improper food and exposure to cold are therefore cautiously to be avoided, and costiveness to be immediately removed. If there be any appearance of suppuration and ulceration, particular attention becomes still more necessary, as it will give the ulcers a better chance of healing.

In the cure of strangulated hernia, the judicious surgeon will never place his patient on his head, and toss him about in the manner sometimes adopted, as such a practice might increase instead of abate tumefaction; nor will he attempt to push the protruded parts by force through an aperture which bears no proportion to their dimensions. No; he will enjoin composure, and strictly keep in view, that until the obstruction in the intestine, which is the effect of inflammation, is removed by copious and repeated venesections, its being replaced in its original situation ought not to be attempted. In a word, bleeding to a great extent, and avoiding manual efforts, will be the most likely means to ensure success in all cases of strangulated hernia. Where our endeavours fail, recourse should be had in due time to the proper operation for removing the stricture on the protruded parts, to guard against gangrene.

HEPATITIS, OR INFLAMMATION OF THE LIVER.

Pyrexia, tension, and pain of the right hypochondrium, often pungent, as in pleuritis, but sometimes dull, pain in the clavicle and top of the right shoulder, uneasy lying on the left side, difficult respiration, dry cough and vomiting, are the characteristics of hepatitis: very frequently there is some degree of jaundice.

Hepatitis has generally been considered of two kinds; the one acute, the other chronic; the former showing the essential character of genuine inflammation; the latter exhibiting symptoms of less violence as to their inflammatory tendency, but an enlargement and hardness of the liver, with an obtuse pain.

Besides the causes producing other inflammations, such as the application of cold, external injuries from contusions, blows, &c., this disease may be occasioned by violent exercise, by intense summer heats, by long continued intermittent and remittent fevers, by high living, and an intemperate use of vinous and spirituous

liquors, but more particularly the latter, and by various solid concretions in the substance of the liver. In five cases out of six, the exciting cause of acute hepatitis will be found to be the partial application of cold or wet when the body is heated or over-fatigued by violent exercise. Derangement of the digestive organs, suppressed secretions, inflammations, compression, fevers, and mental solicitude, are very general causes of obstructions and diseases of the liver.

In warm climates this viscus is more apt to be affected with inflammation than any other part of the body, probably from the increased secretion of bile which takes place when the blood is thrown on the internal parts by an exposure to cold; or from the bile becoming acrid, and thereby exciting an irritation in the part. An inflammation of the liver, and the diseases consequent thereon, are indeed affections more frequently to be met with in warm climates than in cold ones, particularly in the East and West Indies, where few Europeans can reside for any length of time without being attacked by them. The liver in warm climates seems to be the seat of disease nearly in the same proportion that the lungs are in Great Britain. Both acute and chronic hepatitis are frequently met with in persons who come to Europe from the East and West Indies, and in those who have been affected when in those climates they are very apt to recur by the application of causes which would be likely to have a different effect upon any body else.

Between the hepatitis of India and that of Europe there is no small dissimilarity in the symptoms. The flux, which may be termed the pathognomic of the former, is always wanting in the latter. That of India partakes more of inflammatory congestion and obstruction; the other of active inflammation, and if not early checked, frequently runs on to suppuration. Such an occurrence in India or the West Indies is principally met with among those lately arrived from Europe, and may in most cases be traced to intemperance, violent exercise in the sun, or sudden exposure to cold when the body has been in a state of considerable perspiration. The hepatitis of India is generally allowed to be, in all similar stages, a milder disease than the sporadic hepatitis of this country, the phlogistic symptoms being less violent.*

The acute species of hepatitis comes on with a sense of chilliness preceding pain in the right hypochondrium, sometimes dull, sometimes sharp, extending up to the clavicle and shoulder of that side, most usually; which is much increased by pressing upon the part, and is accompanied with a cough, oppression of breathing, and difficulty of lying, except on the side affected; together with nausea and sickness, and often with a vomiting of bilious matter; the intestines are generally inactive, and the

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* See Dr. Saunders's Treatise on the Liver. See Essay on the influence of Tropical Climates on Europeans, by J. Johnson, M.D.

stools show a deficiency of biliary secretion, or at least of any intermixture of it with them; the urine is of a deep saffron colour, and small in quantity; there is loss of appetite, great thirst, and costiveness, with a strong, hard, and frequent pulse, of from 90 to 100 in a minute, and sometimes intermitting; the skin is hot and dry at the same time, and the tongue covered with a white, and sometimes a yellowish fur; and when the disease has continued for some days, the skin and eyes become tinged of a deep yellow, particularly when the inflammation is produced by calculi in the parenchyma of the liver.

The appearance of the blood is somewhat remarkable just before it coagulates, when, the red part falling to the bottom, and the buffy coat not yet being formed, it appears of a dull green colour. This is owing to the mixture of the yellow-coloured bile with the purple-coloured venous blood, as yellow and purple form green; the coagulable lymph contains none of the purple colour, therefore the buffy coat is not green, but yellow. The same appearances are observed in the blood of a person labouring under jaundice.

In hepatitis, as well as in other diseases, we do not always find the symptoms of the same degree of violence as they are described in the definition: thus in some cases the fever is severe, in others it is scarcely perceptible: in some instances the pain is very acute and violent; in others, collections of pus have been found after death, when no pain has been felt. When the pain is seated deep in the substance of the liver, as that possesses little sensibility, the pain is usually obtuse; but when the surface is affected, it is acute, and apt to spread to the diaphragm and lungs, producing cough.

Both ancient and modern nosologists have made a distinction between the symptoms that occur when the inflammation occupies the convex surface of the liver, and those that are present when the disease affects the concave. It is said, when great difficulty of breathing, and cough, accompany the pain in the region of the liver, that these symptoms indicate the inflammation to be seated in the superior or convex part; but where the inflammation occupies the concave or inferior surface, which lies contiguous to the stomach and duodenum, there is more sickness and vomiting; and moreover, the pain is not so violent in the region of the organ as in the other instance.

My own observations, during a practice of many years in the West Indies, (where hepatitis is a disease of frequent occurrence,) as well as in England, do not permit me to say that the symptoms which have just been pointed out are so unequivocal as had been represented by nosologists.

It seems probable, says Dr. Cullen, that acute hepatitis is always an affection of the external membrane of the liver, and that the parenchymatic is of the chronic kind.

The chronic species is usually accompanied with a morbid complexion, loss of appetite and flesh, lowness of spirits and despond-

ency of mind, headach or giddiness, general weakness, a morbid sensibility of the nervous system, costiveness, indigestion, flatulency, acidity, and pains in the stomach, a yellow tinge of the skin and eyes, clay-coloured stools, high-coloured urine depositing a red sediment and ropy mucus; an obtuse pain in the region of the liver, extending to the shoulder, together with a sense of weight, unusual fulness, and some enlargement and hardness of the organ, and not unfrequently with a slight difficulty of breathing, or dyspnœa. In some cases of chronic inflammation of the liver the pulse has been observed to intermit; and probably induced either by the blood through the hepatic artery being obstructed by the scirrhosity, by an accumulation of it in the branches of the vena portarum, or by bile in the hepatic ducts.

The symptoms are, however, often so mild and insignificant as to pass almost unnoticed, as large abscesses have been found in the liver upon dissection, which in the person's lifetime had created little or no inconvenience, and which we may presume to have been occasioned by some previous inflammation.

We may readily distinguish hepatitis from pneùmonia by the pain in the former extending into the shoulder; by the sallowness of the countenance; by the cough being unaccompanied by expectoration; and by the less degree of dyspnœa. The heat and pain not being increased upon taking any thing into the stomach, its being able to retain whatever liquids or medicines are received into it, without the immediate rejection of them, and the less prostration of strength, will distinguish it from gastritis. Hepatitis may be discerned from spasm on the gall-ducts, by there being no nausea, by the pain being permanent, by the pulse being 100 and upwards in a minute, and by the patient always preferring to keep the body in a straight quiescent posture; whereas the greatest ease, when there is spasm on the gall-ducts, is obtained by bending the body forward on the knees.

Hepatitis, like other inflammations, may end in resolution, suppuration, gangrene, or scirrhus, in which the liver becomes swelled and hard; but its termination in gangrene is a rare occurrence. It is frequently accompanied with chronic obstruction. Its tendency to run into suppuration is not so great in this country as in warm climates. Indeed it is a rare occurrence here. The period of suppuration is influenced by the degree of inflammation, the season of the year, climate, and the remedies that have been employed. Scirrhus may exist in the liver without previous active inflammation, as in those who have long resided in the East or West Indies. Indeed, a scirrhosity of the liver most generally arises from this cause, and by an abuse of ardent spirits.

The disease is seldom attended with fatal consequences of an immediate nature, and is sometimes carried off by a hæmorrhage from the nose or hæmorrhoidal vessels; and likewise by sweating, by a diarrhœa, or by an evacuation of urine depositing a copious sediment. In a few instances it has been observed to cease on the

appearance of erysipelas in some external part. Serous effusion in the cavity of the abdomen is sometimes a consequence of hepatitis showing itself under the form of ascites.

Hydatids now and then form in or on the liver, and sometimes acquire so considerable a size and hardness, as to be distinguished with great difficulty from chronic hepatitis terminating in suppuration. A case of this nature, which had been of long standing, in a lady of about forty-eight years of age, and the mother of a large family, lately came under my observation. She had some time back consulted some of the most eminent surgeons in London, as also one of this city, by whose advice she was put under a course of mercurial frictions, with the internal use of the pilula hydrargyri and nitric acid, under the supposition that her disease was induration and enlargement of the liver, which might ultimately terminate in a suppuration. There was wanting, however, that yellow tinge of countenance and derangement in the biliary system, to satisfy me perfectly that a just idea had been formed of the nature of her complaint. Laterally it was obvious that a fluid was contained in the tumour, which had now acquired so considerable a size as to render an operation indispensably necessary. On performing this it became evident that the disease was really a very large hydatid, as sixteen pints of water were drawn off through the canula, towards the close of the flowing of which a small quantity of lymph came away.

The most favourable signs in hepatitis are, a gradual abatement of the pyrexial symptoms, an improvement in the complexion, the strength not much reduced by the remedies, return of the appetite, and an increase in the bulk of the body. Intensity of pain in the region of the liver, a full and frequent pulse, considerable heat, thirst, dry skin, costiveness, and frequent rigors, denote approaching suppuration.

When the inflammation terminates in the formation of matter, the inflammatory symptoms gradually subside and give way to those of suppuration. The fever becomes somewhat intermittent, frequent rigors or shiverings are felt, the sense of weight in the part increases, the pains are less acute but throbbing, the tongue is white, with flushings of the countenance; and when the abscess is formed near the edge of the liver, or towards the concave surface, it not unfrequently projects under the false ribs, so that the fluctuation may be felt externally. If the abscess forms on its convex surface, it points towards the cavity of the thorax, corrodes through the diaphragm, and distends the pleura, which it sometimes pushes through the interstices of the ribs. At last the matter finds its way through the intercostal muscles, and may be distinguished through the integuments. If the abscess is apparent, there will be found a fluctuation in the centre, while the circumference remains hard. A change of colour in the skin only occurs where a great quantity of matter is accumulated; or where, by its bad quality, it changes the colour of the teguments. If

much pressure on the tumour with the fingers is employed, a pulsation may often be felt, particularly in irritable habits. Sometimes the inferior lobe of the lungs contracts adhesions with those points of the diaphragm connected with the abscess, by which means the matter will be discharged by the bronchiæ: this is, however, a rare occurrence; but it often happens that the matter is effused into the cavity of the thorax, and forms a purulent empyema. It likewise happens now and then, that the sides of the abscess, forming adhesions with the stomach, or much oftener with the colon, the matter is discharged into their cavity, and evacuated either by vomiting or stool.

On dissection of those who die of hepatitis, the liver is often found much enlarged and hard to the touch, its colour is more of a deep purple than what is natural, and its membranes are more or less affected by inflammation. Dissections likewise show that adhesions to the neighbouring parts often take place; that tubercles, as well as vesicular cysts, denominated hydatids, are sometimes found in it; and that large abscesses, containing a considerable quantity of pus, are often formed in its substance. Biliary calculi are now and then met with. In a few instances, the livers of those who have died of this disease have been found in a putrid state, resembling a honeycomb; but the most common appearance to be observed in those who die of diseased liver is the formation of tubercles* in its substance, with an exception to adhesions. The liver has not unfrequently been found after death to be indurated, or otherwise injured, without any marked indication of disease during the life of the patient, excepting dyspepsia or simple indigestion.

What constitutes great difficulty in managing hepatitis is, that in many cases the symptoms which are primary and indicative of inflammatory affection, are but very slightly marked, even when it is in such a degree as to run with readiness into suppuration, and particularly in the East and West Indies. The pain in the side is not constant or acute, the patient himself takes little notice of it, seldom mentions it unless he is asked about it, and when questioned concerning it, he only tells you, perhaps, that he has felt at times slight pains about the pit of the stomach, or in the right side. It is only by observing the secondary symptoms, such as a diarrhœa, or a short dry cough, and pain felt at the top of the shoulder, or that there is a degree of fulness or tenderness on pressing on the organ a little hard, with some yellowness of the eyes and countenance, that the true state and nature of the disorder is to be ascertained in such cases.

During the inflammatory stage of acute hepatitis it will be proper to adopt general bleeding, proportioning the quantity which is taken away to the severity of the pain, and the degree of fever that is present; and repeating the operation very soon again if the

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* See Morbid Anatomy, by Dr. Baillie.

symptoms do not greatly abate, and the inflammatory action appear to be subdued. By neglecting to bleed in due quantity, and promptly to repeat the operation at the commencement of acute hepatitis, there will be danger of suppuration ensuing. In warm climates, general bleeding may be used with greater moderation than in cold ones. After venesection we should give a proper dose of hydrargyri submurias with jalap, or some other cathartic, repeating it every other day until the inflammatory symptoms subside. These steps being taken, we may recommend the application of several leeches over the region of the liver, or we may draw off a sufficient quantity of blood by applying the scarificator and cupping-glasses.

Some practitioners disapprove of bleeding from the system in this disorder, and recommend in its stead to draw blood from the neighbourhood of the part, by means either of leeches, or scarifications and cupping, which may be the preferable way in those cases which are unattended with much pain or pyrexia, or where the disease has followed a severe intermittent or remittent fever, and consequently the patient is in a cachectic state; but in those where the pain is acute, the pulse full and strong, and the febrile heat and thirst are considerable, copious and repeated venesection at an early period of the disease will be necessary. It will, however, be better to take away at once a quantity proportioned to the age and temperament of the patient, and the degree and extent of the disease, than by repeated small bleedings. It will be proper also in bleeding to make a large orifice, as physicians have been struck at all times with the effect produced by taking the blood from a large orifice* in inflammatory diseases.

If the symptoms do not abate in consequence of these means, a large blister applied over the region of the liver will be likely to prove serviceable. Should it be inclined to heal up too rapidly, or before the desired intention is obtained, a fresh one must be laid on. A succession of blisters will be far preferable to keeping open the first one with any kind of stimulating ointment.

In every case of acute hepatitis, the whole of the antiphlogistic plan is to be rigorously pursued, particularly where the febrile symptoms run high and endanger a termination in suppuration; and therefore it will be understood, that a farinaceous or gruel diet is to be strictly enjoined at the commencement, carefully shunning animal food in broths or otherwise; that thirst is to be assuaged by a free use of cooling drinks impregnated with vegetable acids; that cool air is to be freely admitted into the apartment of the sick, and that the intestines are to be kept perfectly open with gentle purgatives, such as solutions of the neutral

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* See Dr. George Fordyce's Fourth Dissertation, p. 50.
——————— Fifth ditto, p. 15.

salts,* or jalap with the submuriate of mercury administered from time to time.

As in other inflammatory complaints, so in this we may excite a diaphoresis by means of nauseating doses of tartarized antimony, to which we may join the nitrate of potass.† The pediluvium, with a plentiful use of mild diluent and cooling liquids, will also be proper Putting the patient into a warm bath may be advisable in those cases where the skin is dry, and the pain in the region of the liver very severe.

In acute hepatitis, when, after having strictly pursued the antiphlogistic course which has been pointed out for four or five days, the disease is found not to give way, we should call in the aid of mercury. Some practitioners, particularly in the East and West Indies, have recourse to it on the first attack; but the most judicious do not in general use it to effect a mercurial operation until the urgent inflammatory symptoms have been somewhat subdued by an antiphlogistic treatment. In every inflammatory affection of the liver, and where febrile excitement is present, but more particularly in northern climates, although it may be advisable to employ mercury as a purgative at the commencement of acute hepatitis, still I am of opinion that we should not then use it with the view of promoting salivation. The remedy in question, when properly used, is certainly attended with wonderful efficacy, but it appears improper on the first attack of acute hepatitis, which, like other visceral inflammations, readily yields in Great Britain to the ordinary plan of depletion.‡

We may begin the mercurial course at the expiration of the fourth or fifth day of the disease. The most proper way of introducing mercury into the system will be, by rubbing in a small quantity of the ointment (perhaps about one drachm) in the neighbourhood of the part affected, every night, until a slight degree of salivation is excited, or rather until some very obvious effect is produced on the constitution; by which means we shall in general

‡ See Dr. Saunders's Treatise on Diseases of the Liver.

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* 1. ℞ Infus. Sennæ Comp. f. ℥jss.
Magnes. Sulphat. ℥iij.
Tinct. Jalapæ,
Syrup. Rhamni, āā f. ℥j. M.
ft. Haustus.

† 2. ℞ Haust. Salin. f. ℥jss.
Potassæ Nitratis, gr. x.—xv.
Antimon. Tartarizat. gr. $\frac{1}{6}$.
Syrup. Althææ, f. ℥ij. M.
ft. Haustus.

* 1. Take Compound Infusion of Senna, one ounce and a half.
Sulphate of Magnesia, three drachms.
Tincture of Jalap,
Syrup of Buckthorn, of each one drachm.
Mix them for a draught.

† 2. Take Saline Draught, one ounce and a half.
Nitrate of Potass, from ten to fifteen grains.
Tartarized Antimony, the sixth of a grain.
Syrup of Marshmallow, two drachms.
Mix them for a febrifuge draught.

be able to disperse the swelling and hardness. It will be advisable to rub the ointment on the right side, in preference to any other part, because some advantage may possibly be derived from the mere friction over it.

If rubbing in the mercury in the neighbourhood of the part is attended with any pain or inconvenience to the patient, the unction may then be applied to the groins, taking care, however, not to carry it much beyond the point bordering on salivation. With the view of assisting the discussion of the inflammation, and obviating any severe effects from the use of mercury, some gentle purgative, such as a solution of any neutral salt in an infusion of senna, may be taken every third or fourth morning.

A modern writer mentions,* that it is by no means sufficient to render the mouth sore by mercury; it must be carried to the extent of producing a copious salivation, as the disease never yields till the saliva flows freely. In this opinion I believe he is singular; but indeed the generality of the East India practitioners seem to carry the point too far.

Should we wish the mercurial action to be soon effected, we may employ mercury internally as well as externally; and to make its effect the more certain, we may join small doses of opium or antimony with it, administering them in the form of a pill.† If we find the submuriate of mercury not to answer our wishes, we should substitute the pilula hydrargyri, the patient taking one or two every night at bedtime, as may be judged necessary. In hepatic derangements this remedy has, of late years, been very extensively and usefully employed in the United Kingdom.

If the disease yields readily, a short course of mercury will be sufficient; but if not, its use ought to be continued for, perhaps, five or six weeks.

I wish here to recapitulate the treatment of acute hepatitis just pointed out, and to say, that he who will most successfully combat the disease, will endeavour first to arrest and subdue the inflammatory action, as much as possible, by copious bleeding from the arm, and afterwards by leeches or scarifications

* See Medical Sketches, by Sir James M'Gregor, M.D.

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† 3. ℞ Hydrargyr. Submur. ℥i.
Opii,
Camphoræ, āā ℥ss.
Syrup. Simpl. q. s. M.
ft. massa in pilulas æquales xxx. distribuenda, capiat j. vel ij. pro dos.
Vel,
4. ℞ Hydrargyr. Submuriat. ℥j.
Opii Puriff. ℈j.
Antimon. Tartarizat gr. v
Syrup. Simpl. q. s. M.
ft. massa, in pilul. xxx. divid. j. mane et nocte quotidie sumenda.

† 3. Take Submuriate of Mercury, one drachm.
Opium,
Camphor, of each half a drachm.
Common Syrup, a sufficiency to form the mass, which divide into thirty pills, and take from one to two for a dose.
Or,
4. Take Submuriate of Mercury, one drachm.
Opium, one scruple.
Tartarized Antimony, five grains.
Syrup, a sufficiency to form the mass; divide this into thirty pills, and let one be taken night and morning.

over the region of the liver, succeeded by blisters, while mercurial purgatives are at the same time employed to clear the whole line of the alimentary canal. When by these means the vascular excitement is reduced to a certain level, then a restoration of the secretion in the liver will be the surest safeguard against future lesion, both of structure and function, in this important viscus; and this is to be done by a judicious exhibition of mercurials joined with antimonials, or even with opium. Throughout the whole of this course, there will be a strict necessity to avoid the remote and exciting causes which brought on the disease.

When assistance has not been procured in due time, or the means which have been employed to carry off the inflammation in the liver have not been attended with the desired effect, and suppuration has ensued, we must endeavour to promote the formation of proper pus, and the discharge of the abscess externally.

To effect the first of these intentions, the patient should be directed to take a drachm of the powdered bark of cinchona every two or three hours, using at the same time a generous nutritive diet, with a moderate quantity of wine, which course ought to be continued until the suppuration is completed; and to promote the second intention, a large emollient poultice should be kept constantly over the part, well fomenting it twice a-day, previous to the application thereof. When the tumour points outwardly, and has become somewhat soft, with evident fluctuation, we should immediately open it in the most dependent part, taking care not to touch its adhesion with the corresponding portion of the peritoneum. The opening may be made through the external integuments with a scalpel, and on reaching the abscess it may either be touched with a lancet, or be pierced with a trocar, which may be the preferable way, as we shall thereby have it in our power to evacuate the matter slowly and gradually, which in large collections is a point of importance, and therefore deserving of attention. The fluid discharged is most commonly of a grayish colour, but not invariably so. To facilitate the discharge of the matter, the patient ought to be placed in the most favourable position, and the belly be gradually compressed by means of a proper bandage. The dressings ought to be simple, and frequently renewed. Should the lips of the wound after some days seem disposed to close before the healing of the interior parts, a tent of soft lint, dipped in some digestive ointment, may be inserted into them. To the end of the cure, cinchona with stomachic bitters, wine and a generous diet, will be proper. Suppuration of the liver is a disease of such frequent occurrence in the East Indies and other warm climates, that the practitioners there are become very expert at this operation, and frequently perform it with safety when the tumour does not point at all, judging merely by the preceding progress of the case, and the degree of fulness in the hypochondrium.

Abscesses in the liver sooner heal when opened than similar

affections in other parts of the body, and perhaps with less inconvenience; and, therefore, whenever we have good grounds for suspecting that matter has formed in this viscus, we may advise an opening to be made into the abscess, whether situated on the convex part of it or not, in preference to suffering it to break internally, by which its contents must be evacuated into the abdomen, to the almost certain destruction of the patient.

Should the abscess discharge itself into the cavity of the chest, and so form purulent empyema, the proper operation ought to be performed without any loss of time.—See Empyema.

The common plan of cure in chronic hepatitis is by mercury, and it is certainly the most effectual practice. It should be given in small doses and slowly, so as to keep up a brassy taste in the mouth for a considerable time, as it promotes the secretion of bile, and excites the extreme vessels on the surface. To increase the latter effect, it has, however, been found useful to combine it with a small proportion of antimonial powder, as likewise of opium to protect the bowels from irritation.

The next most salutary process is to keep up the regular peristaltic motion of the intestines, and excite the mouths of the excretory ducts of the liver. With this view one or two of the pills prescribed below* may be taken occasionally at bedtime, succeeded the ensuing morning by a draught composed of some neutral salt, as prescribed in the treatment of acute hepatitis.

Our attention is at the same time to be directed to the cuticular discharge, which ought to be promoted by the most gentle means, such as moderate exercise and flannel next to the skin. When hepatic obstructions exist, with too great a determination to the bowels, keeping them in an irritable state, the utility of flannel is apparent. The assiduous and frequent application of the flesh brush, or friction with the hand, over the hypochondriac region, will be found to excite the healthy action of the biliary organ in no slight degree. A tepid bath will be useful, but some caution will be requisite in avoiding subsequent chillness. Warm mineral waters may also be taken internally.

When there is much local uneasiness, repeated blisters may be had recourse to with some advantage. General bleeding is never necessary in chronic hepatitis: in a few instances, topical may be serviceable.

Among the local means, I beg leave to observe, that in those instances where the liver has been exceedingly enlarged, decided

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* 5. ℞ Extract. Colocynth. C. ʒj.
Hydrargyr. Submur. ʒj.
Antimon. Tartarizat. gr. iv.
Ol. Carui, ℥ v.
Syrup. Simpl. q. s. M.
ft. Pilulæ xxx.

* 5. Take Compound Extract of Colocynth, one drachm.
Submuriate of Mercury, one scruple.
Tartarized Antimony, four grains.
Oil of Caraway, seven drops
Common Syrup, a sufficiency to form the mass, which is to be made into thirty pills.

benefit has sometimes been derived from the application of a plaster of ammoniacum with mercury, spread largely over the diseased surface, so as to act medically, as well as on the principle of a bandage in giving some support.

In that species of diseased liver which arises from an immoderate use of vinous or spirituous liquors, a mercurial course has been objected to by Dr. Trotter. In the tubercular or scirrhous liver, he tells us,* it had seldom appeared to him to be of any service, beyond its action in keeping the bowels open, when costiveness was to be guarded against. My own experience, however, does not lead me implicitly to adopt this conclusion; on the contrary, in more than one instance of incipient scirrhous liver, slightly complicated with dropsy, I have seen mercury employed with advantage. Mercury, however, will not fail to prove injurious in those cases where the structure of this viscus is considerably destroyed.

We have been informed, that of late the nitric acid, largely diluted with water and mucilage of syrup,† has been used in the East Indies in chronical affections of the liver, and it is said with much benefit

As an auxiliary remedy, it certainly may be employed with safety and advantage. Where the disease arises in a person of a scorbutic habit, there is no doubt that the use of mercury would be highly improper, as it would infallibly increase the symptoms, and hasten the fatal termination thereof; and in such cases, the nitric acid may be given with much advantage, as it will not only relieve the hepatic affection, but may likewise, in some degree, amend the scorbutic tendency.

In the treatment of chronic inflammation of the liver, great commendation has been bestowed upon the taraxacum (dandelion) by a modern writer,‡ who tells us that he has seen the most decided advantage, both in incipient scirrhus of the liver, and also in several chronic derangements of the stomach, in the dose of half a drachm of the extract twice a day. Either a strong decoction, or the fresh expressed juice, in doses of from two ounces to four, two or three times within the twenty-four hours, will however be found more active preparations.

Enlargements of the liver and spleen are sometimes the consequence of long continued intermittents, and they not unfrequently resist the effects of mercury, although the salivary glands have been sufficiently excited. In cases of this nature we may

* See his Essay on Drunkenness, and its Effects on the Human Body.

‡ Dr. Robert Pemberton's Treatise on Diseases of the Abdominal Viscera, p. 42.

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† 6. ℞ Acid. Nitric. Dilut. ℥ vi.—x.
Aq. Puræ, f. ʒxij. M.
Syrup. Cort. Aurant. f. ʒij. M.
ft. Haustus ter quaterve die sumendus.

† 6. Take Diluted Nitric Acid, from nine to fifteen drops.
Pure Water, twelve drachms.
Syrup of Orange Peel, two drachms.
Make them into a draught, which is to be taken three or four times a day.

make trial of the succus inspissatus conii, probably with better success.—See Intermittents.

The diet best adapted for persons labouring under chronic hepatitis, is such as is attenuant, nutritive, and easy of digestion; avoiding salted meats and greasy substances. By degrees it may be improved by the addition of broths, light animal food, &c., until health is perfectly restored. He who labours under obstructed liver, and hopes to prolong his existence, must abandon what are called the pleasures of the table, and observe a rigid temperance with respect to diet. If wine is drank, it ought to be diluted with water: but in most cases this last alone will be the best beverage. Malt liquors will seldom agree, and spirituous ones ought to be shunned as poison. Late hours and night air ought to be cautiously avoided.

Such as labour under chronic affections of the liver in India, or the West Indies, should never return to Europe in the winter. Those of the former who cannot undertake the long and expensive voyage to Europe, ought to change a continental for an insular situation. The most proper places will be, Prince of Wales' Island, which enjoys a milder air and a lower range of temperature than any of the Presidencies; or St. Helena, which approximates more to the climate of Europe than that of any other inter-tropical situation. Those of the West Indies may go to America, and they will be likely to experience considerable benefit from the voyage and sea air.

The complicated diseases which are often brought on by a long residence in warm climates, affecting the secretion of bile, the functions of the stomach and alimentary canal, and which generally produce organic derangement in some part of the hepatic system, often receive much benefit from the Bath waters, if used at a time when suppurative inflammation is not actually present; and they will certainly prove a good auxiliary to other proper means.

Cheltenham water may also be taken with singular advantage by those who labour under any chronic affection of the liver; and this spring is indeed the resort of most of those who have had their biliary organs injured by a long residence in a warm climate. This water, besides containing salts of a purgative nature, is likewise a chalybeate; and the iron is suspended by carbonic acid. of which gas the water contains about an eighth. Its great efficacy, however, in chronic hepatitis, is owing to the gentle continued purging which it excites.

Persons of a bilious habit, and who are at the same time costive, will find much benefit by taking two or three of the aperient pills here recommended,* at night, or in the morning, as necessity may require.

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* 7. ℞ Extract. Colocynth. C 3j.
——Jalapæ, 3ss.

7. Take Compound Extract of Colocynth, one drachm.
Extract of Jalap, half a drachm.

SPLENITIS, OR INFLAMMATION OF THE SPLEEN.

THIS disease comes on with rigors, succeeded by heat, thirst, and other febrile symptoms; there is an anxiety and straitness in the præcordium, with difficult respiration, often conjoined with a cough without expectoration. The patient complains also of external heat, tension, pains in the left side, which sometimes extend through the whole region of the abdomen, or shoot through the diaphragm, and into the left shoulder The pains are increased on pressure, and are pulsatory, pungent, and burning in various degrees. The pulse on the left side is sometimes partially suppressed, often intermittent, weak, and not quick. There is lassitude and loss of strength, watchfulness, and sometimes delirium; dyspepsia, anorexia, vomiting of green bilious matter, and sometimes difficulty of urine; from an affection of the kidney or bladder; swelling in the region affected, representing the form of the spleen, faintings, and bleeding from the nostrils at the height of the disease: but the most remarkable symptom which attends, is the bloody vomiting, which most authors have considered as peculiar, and have designated by various names. By the ancients it was termed atra bilis. At the commencement, the intestines are rather confined, but they soon become relaxed, and emit substances somewhat coloured by black blood.

Like the liver, the spleen is often attacked with chronic inflammation, and in time becomes enlarged and indurated. Sometimes suppuration ensues, and forms an abscess.

The causes of the disease are most generally the same with those of other inflammatory diseases; but enlargements of the spleen are frequently the consequence of long-continued intermittents; and these, as well as indurations of the liver, are called ague-cakes. They arise, no doubt, from too great a determination of blood to these viscera during the several attacks of the cold fits.

With respect to the prognosis in splenitis, it need only be observed, that, like other inflammations, it may terminate either in resolution, suppuration, or scirrhus. Sometimes it is carried off by a vomiting of dark-coloured matter, resembling coffee-grounds: sometimes by a diarrhœa, and sometimes by a hæmorrhage from the hemorrhoidal vessels. The vomiting of grumous matter is under common circumstances to be considered a favourable and critical evacuation, yet it sometimes proceeds to a fatal excess. Where splenitis terminates in suppuration, and the contents of the abscess are evacuated in the cavity of the abdomen, the event may

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Antimon. Tartarizat. gr. iv.
Sapon. Venet. ℥j.
Ol. Carui ♏ viij.
Syrup. Rhamni, q. s. M.
ft. massa, in pilulas xl. distribuenda.

Tartarized Antimony, four grains.
Soap, one drachm.
Oil of Caraway, twelve drops.
Syrup of Buckthorn, a sufficiency to form the mass into forty pills.

prove fatal sooner or later; but a simple enlargement of the spleen is often supported for many years without any very great inconvenience or hazard to the patient.

Dissections of dead bodies show that the spleen is inflamed and sometimes gangrenous, and that the surrounding viscera partake of the inflammation: occasionally an abscess is formed.

The conclusions which have been drawn from a multitude of pathological as well as anatomical facts are, that the spleen is an organ peculiar to red-blooded animals; that it is of great importance in preparing and mixing the blood; and that its action is of great consequence to the liver.

During the acute stage of splenitis we must adopt the antiphlogistic plan, by general and topical bleedings, by purging frequently with the submuriate of mercury combined with jalap, and by the repeated application of a blister over or near the part affected. If the inflammation should terminate in suppuration, the abscess is to be encouraged to discharge its contents externally, by fomentations and poultices. Where its termination is in enlargement and induration, or scirrhus, we must employ mercury at an early period, both as a purgative and deobstruent, in the manner advised for the removal of chronic inflammation of the liver. The nitric acid may also be tried. If these remedies are not attended with success in removing the enlargements, although the salivary glands have been sufficiently excited, we may make trial of the succus inspissatus conii, which has been found to answer when mercury has failed.* —See Intermittents.

NEPHRITIS, OR INFLAMMATION OF THE KIDNEYS.

Nephritis, properly considered, appears to be of two kinds; the one arising from the general causes of inflammation, and being seated principally in the external membrane of the kidney; the other occasioned by the stimulus of gravel or a stone in the pelvis of it, and the inflammation occupying the interior parts. It is, however, only the first of these that I mean here to investigate, the other will be noticed under the head of Calculus.

This species of inflammation may be distinguished from the colic, by the pain being seated very far back, and by the urine being of a deep red colour, voided frequently, and in small quantity at a time; and it may be known from rheumatism, as in nephritis the pain is not much increased by the motion of the body.

It is to be distinguished from a calculus in the kidney or ureter, by the symptoms of fever accompanying or immediately following the attack of pain, and these continuing without any

* See Essay on Hepatitis and other Bilious Complaints, in India as well as Europe, by Charles Griffith, M.D.

remarkable intermission; whereas, in a calculus of the kidney or ureter, they do not occur until a considerable time after a violent pain has been felt. In the latter case, too, a numbness of the thigh, and a retraction of the testicle, on the affected side, usually take place, together with a constant nausea and vomiting.

Nephritis is to be distinguished from lumbago by the seat of the complaint, discovered upon pressure; by the dysuria and micturition, by its being frequently attended with vomiting, and by the pain extending along the course of the ureter, and not being much increased on motion, or by an erect posture.

The causes which give rise to this species of nephritis are, external contusions; strains of the back, acrids conveyed to the kidneys in the course of the circulation, violent and severe exercise either in riding or walking, exposure to cold, and sand or stone in the kidney. In some habits there is an evident predisposition to this complaint, particularly the gouty; and in these there are often translations of the disease to the kidneys, which very much imitate nephritis. In plethoric and inflammatory habits, an immoderate use of spirituous liquors may give rise to nephritis.

An inflammation of the kidney is attended with a sharp pain on the affected side, extending along the course of the ureter; and there is a frequent desire to make urine, with much difficulty in passing it; the body is costive, the skin is dry and hot; the patient feels great uneasiness when he endeavours to walk or sit upright; he lies with the most ease on the affected side, and is incommoded with nausea and vomiting, and there are often costiveness and colic pains.

In forming an opinion as to the event, we are to draw our conclusion from the severity of the symptoms, and from the quantity and appearance of the urine which is voided. When the disease is protracted beyond the seventh or eighth day, and the patient feels an obtuse pain in the part, has frequent returns of chilliness and shiverings, there is reason to apprehend that matter is forming in the kidney, and that suppuration will ensue. Remission of pain, fever, and tension, followed by a copious secretion of high-coloured mucous urine, universal diaphoresis, or a flow of blood from the hemorrhoidal veins, are favourable symptoms.

The terminations of nephritis are of the same nature as other inflammations. In slight and favourable cases, resolution may be obtained; bu where the disease has continued with considerable violence for upwards of a week, suppuration may be apprehended. It may happen, however, that when the disease has been kept down by proper remedies, resolution may take place as late as the fourteenth day. It is marked by the disappearance of the fever and all the symptoms. Suppuration is marked by a remission of the pain, with rigors, throbbings, and hectic fever: in some cases, pus is discharged with the urine.

Nephritis has been known to terminate in gangrene; but this is

very rare. The occurrence is characterized by a sudden cessation of the pain after it had long resisted every remedy; with sinking of the pulse, cold sweats, &c., as in other cases of gangrene.

Another termination of the disease is scirrhus, or enlargement and hardening of the kidney. Sometimes nephritis gives rise to gravelish complaints, probably from extravasated blood, or lumps forming a nucleus.

Dissections of nephritis show the usual effects of inflammation on the kidney, and they likewise often discover the formation of abscesses which have destroyed its whole substance. In a few instances the kidney has been found in a scirrhous state, and prodigiously enlarged; in other ways nearly wasted away.

In the cure of nephritis our chief reliance is to be placed on bloodletting, both general and local, assisted by fomentations, the use of a warm bath, and emollient clysters, &c.

On the first coming on of this complaint, a quantity of blood proportionable to the severity of the pain, and the age and habit of the patient, ought immediately to be taken away: and if the first bleeding does not afford considerable relief, the operation should be repeated on the same day, or on the next at farthest.—Topical bleeding, with several leeches over the kidney affected, may afterwards be necessary.

After bleeding, we may advise flannel cloths wrung out of a warm decoction of emollient herbs, or a bladder filled with warm water, to be kept constantly applied over the part which is painful: and by way of internal fomentation, an emollient clyster may frequently be injected. The patient is at the same time to be directed to drink plentifully of mild diluents, such as barley-water, thin gruel, whey, linseed or marshmallow tea, &c.

The nitrate of potass is a good antiphlogistic medicine in most internal inflammations: but in nephritis its use has been supposed to be very doubtful, on account of its passing quickly by the kidneys, and irritating them.

The intestines are to be emptied by gentle aperients,* employed as frequently as the occasion may require, in addition to emollient clysters, as constipation ought carefully to be guarded against.

Should these means have been adopted without affording relief

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* 1. ℞ Mannæ Optim. ℥ss.
Potassæ Tartrat. ℥iij.
Aq. Fervent. f. ℥iss.

Tinct. Sennæ, f. ℥j. M. ft. Haustus.

Vel,

2. ℞ Ol. Ricini, f. ℥j.
Mucil. Gum. Acaciæ,
Aquæ Fœnicul. ãã f. ℥ss.

Tinct. Jalap. ℥xxxv. M. ft. Haustus.

* 1. Take Manna, half an ounce.
Tartrate of Potass, three drachms.
Warm Water, one ounce and a half.
Tincture of Senna, one drachm.
Mix them for a draught.

Or,

2. Take Castor Oil, one ounce.
Mucilage of Gum Acacia,
Fennel Water, of each half an ounce.
Tincture of Jalap, fifty drops.
Mix them as a draught.

to the patient, he ought then to be put frequently into a warm bath, continuing him in it for about fifteen minutes each time. The remedy will produce a powerful determination to the surface of the body, and greatly increase the action of the cutaneous exhalants.

Mild diaphoretics, such as the saline medicine combined with nauseating doses of tartarized antimony, will at the same time be proper.

When the febrile symptoms do not run high, and the inflammation has been subdued by a vigorous adoption of antiphlogistic remedies, opiates may be used occasionally to soothe pain, and may be added to the clysters. In nephralgia they are very important remedies, but not in pure nephritis.

In nephritis the application of blisters would be improper. They are apt to affect the urinary organs and vessels, and to occasion much irritation, and would consequently increase the inflammation. Sprinkling the surface of blisters with camphor is said to prevent any irritation of the kidneys; but never having observed such an effect, I will not pretend to attest its efficacy. Rubefacient liniments over the region of the kidney may perhaps be of some service.

It has been mentioned that a difficulty of making water is one of the symptoms attendant on this disease: to obviate it, some practitioners give heating diuretics, such as turpentine, balsams, &c. The practice seems very improper, and ought not to be followed, as it will be more advisable to apply warm fomentations over the region of the bladder and kidney, to eject emollient clysters with an addition of opium, and to make the patient drink frequently of warm diluents.

A decoction of the dried leaves of the peach-tree, (*Amygdala Persica*, Linn.) prepared as mentioned under the head of Hæmaturia, and drank in the quantity of a pint a day, has been found a very useful remedy in many cases of nephritis.

When the urine deposits a quantity of muco-purulent matter, showing that the inflammation has terminated in a suppuration, or that an ulcer has already formed in the kidney, balsamics and detergent medicines, with a long continued course of chalybeate waters, but more particularly those of the Bristol wells, will be very proper. The cinchona bark may also prove serviceable.

One of the best medicines, however, with which I am acquainted, in such cases, is the uva ursi, which may be given in doses of half a drachm, or a drachm, three times a day. I have tried it in several instances, and in general with a happy effect.

Where an inflammation of the kidney has arisen from the stimulus of a stone or large piece of gravel lodged there, we should have recourse to the exhibition of anodynes and opiates in considerable doses, both by the mouth and by clyster, together with the other means advised under these particular heads.

In renal hæmorrhage, as well as in most other internal hæmor-

rhages, alum as an astringent, and the acetate of lead and digitalis as sedatives, are the remedies chiefly to be depended upon.

In nephritis every kind of food which is of a stimulating nature ought carefully to be avoided, and such only as is lenient and nutritive should be used, as every thing which is heating or acrid proves a stimulus to the kidneys. Emollients and thin liquors should be drank plentifully, and the patient should take frequent small draughts of them notwithstanding the vomiting, as nothing so safely abates the inflammation, after proper evacuation by bleeding as copious dilution.

Those who are liable to frequent returns of the disease, or to obstructions in the kidneys, ought carefully to avoid getting wet in the feet; as likewise all exposures to cold: they ought to lie on a mattress in preference to a feather-bed; their exercise should be moderate, and they should use no kind of wine which abounds with tartar.

CYSTITIS, OR INFLAMMATION OF THE BLADDER.

TENSION and pain over the pubes, with a frequent desire of making water, difficulty in voiding it, or a total suppression, together with tenesmus and pyrexia, mark this disease.

It is seldom a primary affection, but arises in consequence of inflammation in the neighbouring parts. It is sometimes, however, occasioned by a suppression of urine and consequent overdistention of the bladder, or by a stone of considerable size lodged in it.

The treatment advised in nephritis, or in ischuria and dysuria, to which I beg leave to refer the reader, will be proper here, except that we should not give liquids in great quantities, lest we distend the bladder beyond what it is capable of bearing.

In consequence of previous inflammation from some exciting cause, the mucous membrane of the bladder now and then becomes thickened, indurated, or ulcerated; and a considerable quantity of mucus mixed with pus passes off with the urine, giving to it the appearance of whey, and now and then blood is discharged.

In the treatment of such cases, we are to prevent any collection of fæces in the rectum by means of some cooling laxative taken from time to time; to abate pain by small doses of opium, and to inject the bladder two or three times a day with warm water, or some emollient decoction, by means of an elastic gum catheter with a bottle of the same material fitted to it, or that modern apparatus termed the vesicæ lotura, from which mode of treatment very great relief and benefit* have been obtained in cases of

* See Account of the Vesicæ Lotura by Mr. Jesse Foot.
See Cases of Diseased Bladder, by Mr. Wadd, p. 16.

ulcerated bladder, or where there has been a purulent sediment in the urine, with a frequent desire to void it. Some of the detergent balsams, such as the copaiba, terebinthina Canadensis, &c., may be advisable. Where we have reason to suspect scirrhosity, the extractum conii, or hyoscyami, will be proper medicines in addition to the former.—See Diseased Prostate.

PERITONITIS AND HYSTERITIS.

INFLAMMATION of the peritoneum, and also that of the uterus, as belonging to the class of pyrexiæ, ought properly to have succeeded cystitis: but as they occur most frequently to women after delivery, they have been placed among the diseases of the puerperal state.

Peritonitis is, however, by no means an uncommon disease, independent of parturition, and of course is not unfrequently met with in males as well as females. In these instances the disease is produced by an exposure to cold when the body has been heated by severe exercise, and the inflammation now and then seizes the stomach, intestines, or liver, and then is translated to, and principally occupies, the peritoneum, as happened in a case which lately came under my observation, and which proved fatal by a high degree of effusion taking place in the cavity of the abdomen, notwithstanding that active depletory means, both by general and topical bleedings, were early resorted to.

PODAGRA, OR GOUT.

HEREDITARY, arising without an apparent external cause, but preceded generally by an unusual affection of the stomach, pyrexia, pain at a joint, particularly of the great toe, infesting the articulations of the feet and hands, returning at intervals, and often alternating with affections of the stomach, or other internal parts, are assigned by Dr. Cullen as the characteristics of gout.

A morbid action of a peculiar or specific nature seems to take place in the disease.

Of the gout there are four species or varieties: the regular, atonic, misplaced, and retrocedent.

The only disorder for which gout can possibly be mistaken is the rheumatism; and cases may occur wherein there may be some difficulty in making a just discrimination; but the most certain way of distinguishing them will be to give due consideration to the predisposition in the habit, the symptoms which have preceded, the parts affected, the recurrences of the disease, and its connexion with the other parts of the system; which circumstances are usually different in the two diseases.

In the gout the pains generally attack the small joints, and are

at the same time less inclined to shift; but when they do, they usually seize the corresponding limb, or some of the viscera; the parts are more red and swollen than in rheumatism, and the dyspeptic symptoms, which rarely precede rheumatism, are present in a considerable degree for some days prior to the taking place of a fit of the gout.

Rheumatism and gout are, however, sometimes combined; in which cases, a diagnosis is neither necessary nor possible.

The attacks of gout are chiefly in the spring of the year, and the beginning of winter, and the disease seldom appears at an earlier period of life than from five-and-thirty to forty. When it does, it may be presumed to arise in general from an hereditary predisposition, susceptibility, or constitutional bias.

Gout chiefly attacks men, and particularly those who live well and lead a sedentary life; those who are addicted to literary pursuits; those who keep late hours, or who are in the decline of life: but we meet with it now and then in females of a full and robust habit of body. Men who are employed in constant bodily labour, or who live much upon vegetable food, as well as those who make use of wine and other fermented liquors very sparingly, are not often afflicted with the gout. Eunuchs are seldom attacked by it.

The exciting causes of the gout may be divided into those which induce a plethoric state of the body, and those which occasion weakness of the body in general, or of the stomach in particular. Among the latter may be enumerated intemperance of every kind, late hours, intense application to study, long want of rest, much grief or anxiety of mind, great sensuality, long continued fatigue, exposure to cold, particularly by getting wet in the feet, too free a use of acidulated liquors, a sudden change from a full to a spare diet, excessive evacuations, accumulated acidity in the primæ viæ, violent passions of the mind, &c. A full diet of animal food, ragouts, and rich sauces, with a free use of fermented liquors, such as beer, ale, porter, and wine, together with indolence and inactivity, are the causes which give rise to corpulency and a full habit of body; hence the frequency of gout among the rich.

Dr. Darwin mentions, it is a common opinion that this disease is as frequently owing to gluttony in eating, as to intemperance in drinking fermented or spirituous liquors; but that he has never seen any person afflicted with the gout who has not drank freely of fermented liquors, as beer or wine; though as the disposition to all the diseases which have originated from intoxication is in some degree hereditary, a less quantity of spirituous potation will induce the gout in those who inherit the disposition or constitutional bias from their parents.

A fit of the gout is sometimes brought on by severe exercise or walking far, and sometimes by a sprain; and that the disease occasionally takes place from an hereditary predisposition or suscepti-

bility is beyond doubt, as youths of a tender age, and females who have been remarked for their abstemiousness, have been attacked with it.

A predisposition to become affected with this and some other diseases, particularly scrofula and mania, on the application of exciting causes, does certainly exist in the human race. In some instances it is more strongly marked than in others, but predisposition of itself may be inert and insufficient to produce disease: it requires for this purpose the application of an exciting cause.—Such is the light in which we should view what are termed hereditary predisposition and hereditary disease.

A peculiar saline acrimony existing in the blood, in such a proportion as to irritate and excite to morbid action the minute termination of the arteries in certain parts of the body, has been assigned by some physicians as the proximate cause of gout. Dr. Cullen supposed it to be a loss of tone in the extremities of the system, while it is in a vigorous and plethoric state, and the energy of the brain still retains its vigour. Dr. Darwin thought that it arises from the inirritability or defective irritation of some part of the system, the consequence of which is torpor and inflammation.

The opinion most generally entertained by modern physicians is, that the gout proceeds from an accumulation of humours in the relaxed vessels of the ligaments and tendons of the joints; but concerning the nature of those humours, different opinions are entertained, some looking on them as a morbid secretion, and others considering them to be mere blood.

The gout has appeared in some instances to be under the influence of the imagination; for terror suddenly excited, such as by the house of the patient taking fire, has been known in a few minutes to restore the use of his limbs, and admit of his escape with great ease.

A paroxysm of regular gout sometimes comes on suddenly, without any warning; at other times it is preceded by an unusual coldness of the feet and legs, a suppression of perspiration in them, and numbness; or by a sense of pricking along the whole of the lower extremities; and with these symptoms the appetite is diminished, the stomach is troubled with flatulency and indigestion, a degree of torpor or languor is felt over the whole body, great lassitude and fatigue are experienced after the least exercise, the body is costive, and the urine pallid. Some previous affection of the stomach or dyspepsia is almost constantly met with.

On the night of the attack the patient perhaps goes to bed in tolerable health, and after a few hours is awaked by the severity of the pain, which has affected either the joint of the great toe, the heel, calf of the leg, or, perhaps, the whole of the foot; and this becoming at length still more violent, is succeeded by rigors and other febrile symptoms, together with a severe throbbing and inflammation in the part. Sometimes both feet become swelled and

inflamed, so that neither of them can be put to the ground, nor can the patient endure the least motion without suffering excruciating pain.

Towards morning he falls asleep, and a gentle sweat breaks out, and terminates the paroxysm, a number of which constitutes what is called a fit of the gout, the duration of which will be longer or shorter, according to the disposition of the body to the disease, the season of the year, and the age and strength of the patient.

When the paroxysm has thus taken place, although there is an alleviation of pain at the expiration of some hours, still the patient is not entirely relieved from it, and for some evenings successively he has a return of both pain and fever, which continue with more or less violence until morning.

In time the paroxysms, however, prove more mild every day, till at length the disease goes off either by perspiration, increased flow of urine, or some other evacuation; the parts which have been affected becoming itchy, the cuticle falling off in scales from them, and some slight degree of lameness remaining.

At first an attack of gout occurs perhaps only once in two or three years; it then probably comes on every year, and at length it becomes more frequent, and is more severe and of longer duration each succeeding fit.

It may be stated that gout, with little exception, acquires strength with each returning fit, both as to the number of parts which it attacks, and as to the duration and degree of suffering; and it does not, like some chronic diseases, wear itself out by repetition, and yield to the power of time. A premature old age comes on, and together with painful and crippled limbs, the nervous system is so enfeebled, that both mind and body become less equal to sustain the conflict.

In the progress of the disease various parts of the body are affected, and translations take place from one joint or limb to another; and after frequent attacks, the joints lose their strength and flexibility, and become so stiff as to be deprived of all motion. In some instances little swellings, of a very hard nature, arise in the joints of the fingers, to which a late writer* has applied the title of nodosities. Nephritic affections of the kidneys arise also, calculi are produced, and concretions, of a chalky nature, are formed upon some of the joints, particularly on those of the fingers, owing to a deposit of the same kind of matter in them. The fluid which is so effused, is at first white; by degrees the watery and serous particles are absorbed, leaving a substance which is soft and clayey, and that afterwards becomes hard and friable, and when put into acids is perfectly soluble.

This effusion occurs not only during fits of gout, but likewise in the intervals; and as the extremities, particularly the hands and feet, are the principal seat of gout, it is there that the greatest

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* See Dr. Haygarth's Clinical History of Diseases.

accumulations of chalk take place. Though this process is usually preceded by, and accompanied with inflammation, the chalk is never enclosed in a cyst like pus in an abscess. It is usually in the cellular membrane, in the bursæ mucosæ, or in the cavities of the joints.

The chalky liquid, when first secreted, gives to the finger, upon pressure with it, the feeling of a fluctuation, and cannot be distinguished from the ordinary serous effusion of gout; but unfortunately the absorbents do not take up the chalky particles. The consistence of the liquid therefore becomes thicker and thicker, till at last nothing remains but a hard mass. It requires, however, repeated effusions to form any gouty mass of chalk, and the consistence will depend upon its age and the activity of the absorbents. By repeated paroxysms, the quantity at last accumulated becomes considerable, and seriously augments the sufferings of the patient; by its bulk greatly distends the surrounding parts, and obstructs the motion of the tendons and joints, often occasioning a complete anchylosis. The cutis, when distended to the utmost by frequent deposits of chalk, sometimes gives way, and an opening is formed, through which a quantity of it is evacuated.

It sometimes happens, that although a gouty diathesis prevails in the system, yet from certain causes no inflammatory affection of the joints is produced; in which case the stomach becomes particularly affected, and the patient is troubled with flatulency, indigestion, violent pain, loss of appetite, eructations, nausea, vomiting, and a peculiar sense of cold in the epigastric region; and these affections are often accompanied with much dejection of spirits, and other hypochondriacal symptoms. In some cases the head is affected with pains and giddiness, and now and then with a tendency to apoplexy; and in other cases the viscera of the thorax suffer from the disease, and palpitations, faintings, cramps, and asthma, arise. This is what is called atonic gout.

It likewise happens sometimes, that after the inflammation has occupied a joint, instead of its continuing the usual time, and so going off gradually, it ceases suddenly, and is translated to some internal part. The term of retrocedent gout is applied to occurrences of this nature. When it falls on the stomach it occasions nausea, vomiting, anxiety, or great pain, with a sensation of coldness in the epigastric region; when on the heart, it brings on syncope; when on the lungs, it produces an affection resembling asthma; and when it occupies the head, it is apt to give rise to apoplexy or palsy.

In retrocedent or repelled gout, we generally find the disease on the stomach producing violent pain, sickness, vomiting, &c., and patients have died in a few minutes after such an attack: indeed the symptoms are so violent, that they generally think themselves dying. It seems closely connected with a spasmodic affection of the stomach.

A third species of irregular gout is the misplaced; which implies

where the gouty diathesis, instead of producing the inflammatory affections of the joints, occasions an inflammatory affection of some internal part, and which appears with the same symptoms that attend inflammations of those parts from other causes.

All occurrences of this nature, as well as of the two former, are to be regarded as attacks of irregular gout, and are to be guarded against as much as possible. Cases of misplaced gout are not very frequent.

The prognosis in gout may be considered as favourable when the visceral organs are sound in structure, and not materially disturbed in their functions; when the tongue becomes moist and clean; where there is a return of the natural appetite; the fæces recovering a healthy appearance; the urine ceasing to deposit sediment, and at the same time losing its high specific gravity; when the nervous system becomes tranquil, and when the local sensations readily yield in their severity to remedies; the local inflammation soon abating, and not showing a disposition to quick transference from one part to another; or, if it be fugitive, not fixing severely on new parts. In a regular fit of the gout there is seldom any great danger; it is only where the disease appears under an irregular or repelled form that danger arises, and in which either the stomach, heart, lungs, or head become affected. A quick transference of severe inflammation from one part to another, joined with painful sympathy of the stomach, or the head, or with exquisite sensibility of the whole nervous system, are to be considered among the unfavourable signs in gout. In some cases the whole system becomes weak and languid, dyspepsia and syncope supervene, and the disease at last terminates in palsy, asthma, or dropsy, appearing most commonly in the form of hydrothorax.

In youth the disease admits more readily of alleviation than in an advanced period of life; and its attacks may be rendered milder when acquired, than when it proceeds from an hereditary predisposition: moreover, the fit is generally shorter in proportion to the violence of the febrile symptoms and the length of intermission.

When the constitution has suffered great ravages from frequent and severe attacks of the gout, various morbid affections of the viscera are to be observed on dissection; calculi of different sizes and colour are to be found in the kidneys; and on examining the joints which have been rendered stiff and immoveable, it appears as if their motion had been destroyed by the formation of chalky concretions of a similar nature with those lodged in the kidneys. These calculous concretions, or chalk-stones, as they are called, are supposed to be the consequence of local diseased action, and not of systematic origin; or, in other words, that they are only the effects, and not causes of gouty action.

In a paper read before the Royal Society, June 22d, 1797, Dr. Wollaston demonstrated, that the concretions which form on the joints of gouty persons are composed of the lithic acid and soda, forming a compound salt, the lithiate or urate of soda.

Dr. G. Pearson likewise, in a paper read before the same society in December 1797, in which he relates the results of the analyses of upwards of three hundred urinary calculi, particularly mentions the existence of this acid in arthritic concretions. The word lithic, borrowed from the term lithiasis, he recommends to be changed to that of uric. Fourcroy also about the same time discovered the uric acid in these concretions.

Notwithstanding the many remedies which have been highly extolled at different times for the cure of gout, it is a fact well established, that not one which has yet been offered possesses any such power; and all that can be done with safety to the patient is to conduct him through the paroxysm when it has once commenced, afterwards by abstaining from the remote causes, such as full living, acescent food, strong liquors, &c., and making use of gentle daily exercise, to render recurrences of the disease less frequent and more mild than they otherwise might be. In short, great temperance and regular moderate exercise are the most likely means to prevent severe and frequent attacks.

During a paroxysm of the gout, if the attack is severe, it may be necessary to confine the patient in bed, keeping the inflamed parts of a moderate temperature. The confinement of morbid heat by covering of a very warm nature, might only serve to increase pain and prolong the disease. He is at the same time to be kept as quiet and free from all irritation as possible; and as gouty people are generally captious from the severity of the pain which they suffer, they should be solaced, and not be thwarted. If the patient is young and plethoric, he should abstain from all sorts of animal food, aromatics, and fermented liquors, living on water-gruel, panado, sago, arrow-root, and other farinaceous substances. His drink should be some mild diluting beverage, such as barley-water, toast and water, or tea. In elderly people, where the tone of the stomach is weak, or where the patient has been in the constant habit of using strong liquors, and of living principally on animal food, a more generous diet with a moderate use of wine, may be allowed: and as Madeira and Sherry wines are the least apt to become acid on the stomach, they ought therefore to be used in preference to any other kind.

The fostering of arthritic inflammation by the topical use of increased temperature, or covering the parts with flannel, &c., together with the internal employment of stimulant medicines, with a view to obviate its retrocession, and ensure its final extinction, on the part affected, is supposed, by Dr. Kinglake,* to be a very erroneous practice, and as repugnant to the indication of relief furnished by every constitutional feature of the disease.

He tells us, that observation and reflection have forced on his conviction the *fact*, that however loose the analogy may be

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* See his Treatise on the Gout.

between the respective proximate causes of ordinary phlegmonous and arthritic inflammations, the resemblance is sufficiently close in the degree of concomitant temperature. In both, the vascular actions of the system, and of the part affected, generate a morbid excess of heat, alike referrible to distempered conditions of motive power. Impressed with the persuasion, that with regard both to inordinate temperature, and to its general as well as topical manifestations, a radical similitude subsists between these nominally different inflammations, it has appeared to him strictly warrantable to institute a perfectly similar plan of cure, viz. that of reducing heat by keeping cloths wetted with cold water constantly to the parts affected. In support of the efficacy of this plan, he recites several cases which were successfully treated by topically abstracting the stimulus of heat from the parts by water, and such other cold media.

We are further told by him, that he thinks himself justifiable in drawing the following inferences: viz. that a high temperature, whether the cause or effect of the morbid conditions of vital power, which proximately constitute gout, is safely and speedily controllable by the simple application of cold water; that the prevailing opinion relative to the critical nature of that disease on the extremities is liable to much distrust; that the local deposit is not, as commonly supposed, a particular preponderance and detention of the constitutional disorder, but that it originates in the parts themselves, and is thence distributed by associated influence over the system; and lastly, that the longer the local affection endures, the greater probability there will be of morbid sympathies being generated and established on the vital organs, which may terminate in rapid and painful death.

Such is Dr. Kinglake's theory; and being somewhat vague, is not, I think, likely to make many proselytes. Popular prejudice is, moreover, very strong against the remedy recommended by him; and therefore the young practitioner in particular should be cautious in advising it.

It is indeed well known that various diseases of the head, such as headach, vertigo, mania, epilepsy, apoplexy, and a great depression of spirits, in many instances, immediately, or soon succeed the recession of inflammatory gout from the extremities; and a late writer of eminence has recorded* two cases where immersion of a gouty foot in water produced instant relief from the pain, and a proportionate abatement of the inflammation, but which were followed in a few hours by hemiplegia, showing clearly the danger of adopting Dr. Kinglake's plan.

The application of cold water in gouty paroxysms has not however originated with Dr. Kinglake, for it is a mode of treatment noticed by Hippocrates and Celsus, and even by some modern

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* See Elements of Pathology and Therapeutics, p. 396, by Dr. Parry.

writers.* It is therefore only the revival of a practice which has frequently been brought forward, and again abandoned, from its being somewhat hazardous. If the cooling or refrigerant treatment is *ever* adopted, I think it should not be ventured upon until the stomach and other viscera have shown indubitable signs of performing their functions with their proper and accustomed energy, and till the local inflammation has existed for a day or two; and even then, no greater degree of cold should be applied, or be continued for a longer duration, than will be sufficient to subdue the local inflammation. If, notwithstanding this precaution, symptoms of constitutional disturbance should arise, we ought then immediately to remove the refrigerant application, and endeavour to relieve the torpor by suitable stimulants. In no case should the application of cold to the extremities be resorted to without keeping the stomach all the time in a moderate state of activity.

Another physician† tells us, that with regard to external applications in the gout, none out of the many which he had tried proved so effectual as steam, and occasionally confining the inflamed part in a rarer atmosphere; for which purpose he recommends a steady use of the air-pump vapour-bath every other or third day. This treatment, we are informed, has not only the happiest effects on the paroxysms while present, but renders subsequent ones more mild, protracting likewise the intervals between them.

Gout not being, however, a mere local complaint, as Dr. Kinglake and some others seem to imagine, but really a constitutional one, local applications, when resorted to, should, I think, always be joined with internal remedies. Of the two external applications just mentioned, the latter seems to be the safer, although it may not probably remove or carry off inflammation in the limb so quickly as the former.

Instead of cold applications to parts affected with gouty inflammation, a modern writer‡ is of opinion much benefit may be derived from the medium of grateful warmth, by constantly moistening them with a tepid fluid. This may be done either by a sponge, or, perhaps, more effectually by cloths wetted in it, renewing them as often as they become dry. The fluid should be aqueous; and for the purpose of rendering it more evaporable, a portion of either æther or alcohol‖ may be conjoined with it.

* See Mr. Rigby's Treatise on Animal Heat.—Medical Observations, vol. vi.

† See Dr. Blegborough's Communications on Gout, vol. xii. p. 62, of the Medical and Physical Journal.

‡ See Treatise on the Gout, by C. S. Scudamore, M.D.

‖ 1. ℞ Alcoholis, f. ℥viij.
Misturæ Camphor. f. ℥xvj. M.
t. Lotio modice tepefacta ab additione pauli aquæ callidæ, et partibus affectis constanter adhibeatur.

‖ 1. Take Alcohol, eight ounces.
Camphor Mixture, sixteen ounces.
Mix them. This lotion is to be made lukewarm by the addition of a small quantity of warm water, and to be applied constantly to the parts affected.

The temperature of the application should not be under 75, nor exceed 85 ; for if either hot or cold, the intention of the remedy is frustrated. The superincumbent covering ought to be light and cool.

The drying of the parts will be the detachment of stimulant heat, and the cooling effects of the reduced temperature will be felt on the inflamed surface. The refrigerating influence produced by incessantly moistening the inflamed part with a tepid fluid, and leaving it to dry by evaporation, will certainly be powerful ; and I have experienced it to be a much safer method of detaching heat than by the application of cold, as advised by Dr. Kinglake.

Blistering, sinapisms, stinging with nettles, burning with moxa, as practised in the East Indies, rubbing the part with camphorated spirits, pediluvium of simple water, a tepid bath of water and muriatic acid, in the proportion of one ounce to a gallon of water, and covering the part with oil-skin, are remedies which have been proposed for bringing a fit of the gout sooner to a termination, when it has been very tedious ; but they are all attended with some risk, and therefore ought to be avoided.

Percussions and frictions, succeeded by compression with a flannel roller, have been reported* to have proved as beneficial in gout as in rheumatism.

To lessen the violence of the inflammation in very severe paroxysms of the gout, topical bleeding has sometimes been employed, and in the young and plethoric with occasional advantage no doubt ; but we should never think of recommending it to the aged and infirm. With respect to drawing blood from the system, this would only be justifiable in those cases where either the lungs or head are violently affected from misplaced or translated gout. Notwithstanding the prejudice which has prevailed against a use of the lancet in gout, some few physicians (among whom is the late Dr. Heberden) have given it as their opinion, that bleeding is both necessary and advisable where the inflammation is considerable and the pains are very acute ; and they seem to think that it will weaken the tone of the vessels less, and not be so likely to cause a relapse, as by suffering the violence of the inflammation to continue without a check. As gout seldom, however, occurs but in habits previously debilitated by intemperance, indolence, sensuality, or the like causes, the nicest judgment and strictest caution are requisite in carrying this portion of the antiphlogistic plan into execution.

In arthritic affections gentle sudorifics† are sometimes of ser-

* See Observations on an Expeditious Mode of curing Gout, in the 48th No. of the Edinburgh Medical and Surgical Journal, p. 432.

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† 2. ℞ Pulv. Antimonial. gr. ij.
Ammoniæ Subcarbon. gr. viij.
Confect. Rosæ, q. s. M.
ft. Bolus, 3tiis vel 4tis horis sumendus.

† 2. Take Antimonial Powder, two grains.
Subcarbonate of Ammonia, eight grains.
Confection of Roses, a sufficiency to form a bolus, which may be taken every three or four hours.

vice: they should not, however, be selected from the stimulant or aromatic kind; nor be given in a large dose to excite profuse sweating, but only so as to promote and keep up a gentle diaphoresis. Antimonials, or ipecacuanha in small doses, frequently repeated, or volatile salines, assisted by diluting liquors and temperate warmth, may be employed. In habits not debilitated, the common saline draught, with a small quantity of peppermint water, and about eight or ten drops of the vini antimon. tartarizati, may be substituted for the volatile saline.

In gouty paroxysms, where costiveness attends, it will be necessary to have recourse to cathartics, but particularly at their accession; and the most proper possibly may be a solution of the sulphate of magnesia in peppermint water, or rhubarb conjoined with a grain or two of the submuriate of mercury. A modern writer* on this disease says, that calomel, joined with antimonial powder, compound extract of colocynth, and soap, is a good purgative in gout; where a combined and continued action of the bowels and kidneys is required, magnesia and sulphate of magnesia, conjoined with acetum colchici, will be most appropriate. Ever since the days of Sydenham, physicians seem to have been afraid of prescribing purgatives in gout, under the idea of their being likely to prove injurious; but that active purgatives may be employed in gouty paroxysms with perfect safety and most decided advantage, both experience and attentive observation have fully confirmed.

Where gout is combined with anasarcous swellings, as sometimes happens, we may employ cathartics, joined with diuretics, so that the exhalant vessels of the alimentary canal and the secreting function of the kidneys be stimulated to increased action at the same time. With this view, probably, some have employed ela-

* See Treatise on Gout, by Charles Scudamore, M.D.

Vel,

3. ℞ Succi Limon. f. ʒss.
Ammoniæ Subcarbon. q. s. ad ejus saturationem; dein adde

Aq. Puræ, f. ʒvj.
Vini Antimon. Tart. ♏x.—xv.

Syrup. Cort. Aurant. f. ʒj. M.

ft. Haustus, 4ta vel 6ta hora adhibendus.

Vel,

4. ℞ Liquor. Ammon. Acet. f. ʒiij.

Misturæ Camphoræ, f. ʒxj.

Vini Antim. Tart. ♏xij.

Syrup. Cort. Aurant. f. ʒj. M.

ft. Haustus.

Or,

3. Take Lemon Juice, half an ounce.
Subcarbonate of Ammonia, a sufficiency for saturation.
Then add
Pure Water, six drachms.
Wine of Tartarized Antimony, fifteen to twenty drops.
Syrup of Orange Peel, one drachm.
This draught is to be given every four or six hours.

Or,

4. Take Solution of Acetate of Ammonia, three drachms.
Camphor Mixture, eleven drachms.
Wine of Tartarized Antimony, eighteen drops.
Syrup of Orange Peel, one drachm.
Mix them for a draught.

terium. It has been recommended by Dr. Sutton* in conjunction with opium.

If the patient is incommoded by acidity in the stomach during a paroxysm of gout, which when much accumulated in the primæ viæ will sometimes prove alone sufficient to excite it, and always powerfully concurs with other causes, a little magnesia may be taken once or twice a day to correct it. However much the stomach may be oppressed with putrid sordes, we should never venture to prescribe an emetic during the paroxysms.

From the severity of the pain in gout, opiates are sometimes resorted to; but when given in the beginning of gouty paroxysms, or where there is much inflammation, they often make them return with greater violence; but in those cases where the person is far advanced in life, has had frequent attacks, and where there is little or no inflammation, but merely restlessness and pain, they may be given with safety and advantage. About two scruples or a drachm of the confectio opii, taken at bedtime, may be preferable to the tincture opii. Opium, taken in doses sufficiently large to ease pain and induce sleep, conjoined with antimony, and followed up by suitable and adequate purgatives, may, I think, be safely relied upon in all cases of gout, where there is no indication to forbid their use.

Where there exists an inflammatory diathesis, or a constipated state of the bowels, these should always be removed previous to the administration of opium, for the purpose of relieving the pain of gout. Where, from a peculiar idiosyncrasy, opium is found to disagree, we may substitute the use of hyoscyamus.

On the termination of a fit of the gout, a fresh paroxysm is to be delayed or rendered less violent by observing great temperance during the intervals; by avoiding the exciting causes of the disease; by moderate regular exercise every day; by avoiding cold; and by strengthening the body. In young persons, a cold bath, with moderate exercise afterwards, might probably be used with advantage during the intervals; but in elderly people, or where there is any inflammation of the joints, this remedy should never be recommended. Drinking half a pint daily of the double acidulated soda water possibly may have a good effect during the intervals of the paroxysms.

When any swelling and stiffness remain in the joints after the paroxysms have ceased, the stimulus of galvanism, or electricity, conjointly with the frequent use of the flesh-brush, may be attended with some benefit.

In consequence of frequent attacks of the gout, assisted, probably, by some peculiarity of the patient's constitution or habit of body, little swellings or nodosities arise on or near the joints of

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* See his Tract on Gout.

the fingers; for the removal of which we are told by a late writer* that the following indications should be observed: viz. first to diminish the increased action of the vessels in the part by which the secretion of the morbid matter is performed; secondly, to promote a free perspiration of the part affected; and, thirdly, to correct the prevailing disposition to acidity in the primæ viæ, and in the system in general. To accomplish the first of these indications, leeches are to be applied to the tumefied part, their number being determined by the extent of the tumour and degree of the disease. To obtain the object of the second indication, the part is to be surrounded by a plaster of equal parts of simple diachylon and white soap, the adhesion of which to the skin becomes in a few days so slight as to admit the free exit of the perspirable matter through the skin, and which, being hindered from escaping farther, condenses on the surface of the plaster. To fulfil the third indication, a due attention is to be paid to the mode of living, by avoiding acid and acescent matters, and particularly such fermented liquors as have begun to manifest marks of acescency. To neutralize that acidity which being present in the stomach would secure its increase by acting as a ferment, it may be advisable to give the carbonate of soda in doses of from five grains to ten or fifteen in the day.

From the combined influence of these measures it appears, by Mr. Parkinson's account, that the utmost success that hope could look for has been obtained. The gradual diminution, and finally, the complete removal of nodosities which had existed for several months, have been thus procured; while those which had existed for some years have been so much reduced as to allow of considerable motion in joints which had become nearly immoveable.

Dr. Bardsley, physician to the Manchester Infirmary, mentions in his Medical Reports, that he looks on nodosities of the joints to be more nearly allied to chronic rheumatism than to gout. He has therein given the history of three cases of this nature, in the last of which, after a fair but unsuccessful trial of arsenic, cod-liver oil (a remedy much used in Lancashire) cinchona, guaiacum, and warm bathing, he had recourse to mercurial frictions, and by establishing and keeping up for some time a gentle salivation, with the assistance of tepid bathing, and topical bleedings by leeches, he effected a cure. From this instance he appears to think that mercury is capable of destroying the disease when in its incipient state.

When gout attacks a part in which there is an accumulation of chalk, and that is highly inflamed, the best application will be an emollient poultice, having previously well fomented with flannels wrung out in the decoctum papaveris made warm. If the

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* See Observations on the Nature and Cure of Gout, &c. by Mr. James Parkinson.

cutis opens, yet leaves the chalky effusion confined by the cuticle only, a small puncture may be made. This will permit some portion of the fluid to escape, and more will run out into the poultice, by which means the tension will be removed. When the inflammation has subsided, greater freedom may be used. Some portion of the cuticle may then be removed to facilitate the discharge, and gentle pressure be employed.

During violent paroxysms, if the inflamed part is threatened with gangrene, the cataplasma effervescens (see Gangrene) may be substituted instead of the common emollient poultice, after well fomenting with a decoction of cinchona bark and bruised poppy-heads. The cinchona with aromatics, ammonia, wine, and opium, must be exhibited at the same time in doses proportioned to the danger and the powers of the stomach.

Where ulceration remains behind with chalk at the bottom, after the violence of the fit has subsided in severe attacks, mild dressings only ought to be used; for as gouty habits are always irritable, stimulants, such as the hydrargyri nitrico-oxydum, or any caustic application, might do mischief.

Masses of chalk are sometimes formed, however, on parts so inconvenient, or occasioning such deformity, that the patient is anxious to get rid of them even at some risk. On favourable occasions of this nature, where the constitution is sound, and the means recommended by Dr. Bardsley and Mr. Parkinson have failed to produce the intended effect, this may be obtained by destroying the skin with the potassa fusa. After the opening is formed, the sore is to be treated in the common manner.

In irregular, or atonic gout, where no inflammation of the joints is produced, although the gouty diathesis prevails in the system, but the stomach is affected with indigestion, flatulency, acid eructations, and pain, the patient ought not only to avoid all debilitating causes, but should employ proper means for strengthening the system in general, and the stomach in particular.

To support the tone of the system, a proper quantity of animal food ought to be taken, and that which is most nutritive and plain should be preferred. Gout, when in the system, and not regularly formed, requires an excess of animal food to drive it to the extremities, though in some measure it may aggravate the disease should a paroxysm ensue. With the same view a moderate allowance of wine will be proper; but all kinds of acescent wines, such as hock, claret, &c., ought to be avoided. Madeira and Sherry are those which will be most suitable. If the acidity in the stomach is perceived to be increased by a use even of these wines, weak brandy and water, without any addition of either sugar or lemon, may then be substituted.

To strengthen the stomach, aromatics, the cinchona bark,* and

* ℞. Infus. Calumb. f. ℥iv. | * Take Infusion of Calumba Root, four ounces.

chalybeates, such as the ferri subcarbonas, ferri sulphas, &c., may be given.—(See Dyspepsia.) Cinchona is not apt, when long continued, to produce atony in the stomach like bitters, and therefore a preference should be given to it over all others by persons of a gouty habit. Bitters and aromatics certainly give a transient relief; but if long persisted in, they usually produce a bad effect.

Some years ago the Portland powder, (a compound of bitter ingredients, viz. equal parts of the roots of round birthwort and gentian, of the leaves of germander and ground pine, and of the tops of the lesser centaury, all dried,) was much used by gouty people; but from having proved pernicious in many instances, is now laid aside. Dr. Cullen mentions, in his Practice of Physic, that in every instance which he knew of the exhibition of the Portland powder being persevered in for any length of time, the persons who had taken it were indeed afterwards free from any inflammation of the joints, but they were soon affected with many symptoms of atonic gout, and all quickly after finishing their course of the medicine were attacked by apoplexy, asthma, or dropsy, which proved fatal. Dr. Murray, professor at Gottingen, reports in his Apparatus Medicaminum, that he found the Portland powder produce in many instances, apoplexy, palsy, and acute disorders, together with difficulty of breathing, a dry cough, &c., which proved suddenly mortal. Dr. Darwin likewise tells us in his Zoonomia, that two cases of a fatal termination, from a long continued use of bitter medicines, fell under his observation. The daily use of hop in our malt liquors must, he thinks, add to the noxious quality of the spirit in them, and contribute to the production of apoplexy, or inflammation of the liver. It has indeed been observed by many other physicians of eminence, that a long continued and excessive use of bitter remedies seldom fails to weaken the digestive power of the stomach, so as to produce a loss of appetite and impaired digestion, which has accelerated the death of those who had used them.

The Eau Médecinale d'Husson is a remedy much in vogue at present in gouty attacks, and in some cases it appears to have

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Tinct. Cort. Cinchonæ C.

—— Cardam. C. āā f. ℥ss. M.

ft. Mistura, cujus sumat æger cochl. ij. magna bis terve in die.

Vel,

5. ℞ Ferri Subcarbonatis, ℥ij.
Pulv. Cort. Cinchonæ, ℥j.

—— Cinnam. Compos. ℥iss.

Syrup. Cort. Aurant. q. s. M.

ft. Electuarium, de quo capiat quantitatem juglandis bis in die.

Compound Tincture of Peruvian Bark,

———— —————— Cardamoms, of each half an ounce.

Of this mixture let the patient take two large spoonsful twice or thrice a day.

Or,

5. Take Subcarbonate of Iron, 2 drachms.
Powder of Peruvian Bark, one ounce.
Compound Powder of Cinnamon, one drachm and a half.
Syrup of Orange Peel, a sufficiency to form these ingredients into an electuary, of which the bulk of a walnut is to be taken twice a day.

considerably alleviated the paroxysm; but in a few others it has produced alarming effects, such as syncope, cold sweats, extreme prostration of strength, excessive evacuations from the stomach and bowels, accompanied with a pulse scarcely perceptible, and a degree of insensibility that indicated approaching dissolution. Such consequences have, however, only ensued when an improper dose of the nostrum has been taken. Besides possessing the properties of an emetic and a carthartic, it appears also to be endowed with the virtues of a narcotic, as in some instances it seems to act as an anodyne previous to any sensible evacuation taking place. The remedy consists of some vegetable of a bitter nauseous taste (supposed by some to be white hellebore; by others gratioli, or hedge-hyssop, and again by others to be colchicum,* or the common meadow saffron,) infused in Spanish white wine, with an addition of tinctura opii.

The vinum colchici prepared from the roots of the meadow saffron, and given in the quantity of a fluid drachm twice a day, in any vehicle, has certainly been found a valuable remedy in both gout and rheumatism; but to render the success of the medicine more certain, the state of the bowels should be particularly attended to, the patient abstaining from all food likely to prove flatulent.

The roots of the colchicum have been generally employed to make the vinum colchici, as in the Eau Médecinale, but it has sometimes appeared inert: at others, productive of sudden, long continued, and excessive action of the stomach and bowels, and occasionally it has proved fatal. In a communication from Dr. Williams, through the medium of the London Medical Repository, (see No. 85,) we are informed that the seeds of the colchicum, when employed instead of the root, seldom fail of the desired effect, and invariably operate without the occurrence of any of those distressing and alarming symptoms so prevalent from the exhibition of the root. It is also mentioned that the colchicum seeds, so far from their being limited in their use to gout and rheumatism, may be safely and beneficially extended nearly to the whole range of painful diseases of the asthenic kind. Where acidity or flatulency prevails, the spiritus seminum colchici ammoniatus (prepared by macerating for ten days two ounces of the seeds in a fluid pint of the spiritus ammoniæ aromaticus) will be found, by the report of Dr. Williams, a medicine of greater value than the vinum seminum colchici.

In the stomachs of gouty people, a morbid acidity, accompanied by heartburn and flatulence, is usually to be met with, and even this has been thought to have the power of bringing on the

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* Two ounces of the root of colchicum autumnale cut into slices, and macerated in four ounces of proof spirit, until the latter is fully imbued with the properties of the former, is said, by Mr. Want, to be the exact composition of the Eau Médecinale.

disease. Antacids have therefore been found a useful and salutary class of medicines for gouty persons. Alkalies have been considered as of too acrid a nature, and therefore absorbents are preferred; that most commonly used is magnesia, which proves both absorbent and laxative. To quicken its operation, if found necessary, we may combine* it with a small proportion of rhubarb.

Alkalies in various forms, such as the fixed alkali both mild and caustic, lime water and soap, have however been employed in gouty habits, and of late the alkaline aërated water has been much used. Since it became common to exhibit those medicines in nephritic calculous cases, it has often happened that they were given to those who were at the same time subject to the gout; and it has been observed, that under a use of these medicines, gouty persons have received relief, and been longer free from attacks of the disease than before.

As a gentle aperient, rhubarb may be employed when costiveness is to be removed. If it disagrees, aloes may be given in the quantity of five or six grains combined with any aromatic,† the intent being not to purge, but to keep the bowels regular.

In those cases where gout produces anomalous affections of the head, stomach, and bowels, the greatest benefit may be derived from the Bath water; and it is here a principal advantage to be able to bring by warmth that active local inflammation in any limb which relieves all the other troublesome and dangerous symptoms. Hence it is, that this water is commonly said to produce the gout; by which is meant only, that where persons have a gouty affection, shifting from place to place, and thereby much disordering the system, the internal and external use of the Bath water will soon

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* 6. ℞ Magnesiæ, ʒj.
Pulv. Rhei, gr. viij.
—— Cinnnm. C. gr. v. M.

ft. Pulvis, pro re nata sumendus.

Vel,

7. ℞ Magnesiæ, ʒss.
Pulv. Rhei, gr. x.
Aq. Menth. Pip. f. ℥iss. M.

ft. Haustus.

Vel,

8. ℞ Aq. Menth. Pip. ℥vij.
Tinct. Gentian. ℥ss.
Liquor. Potassæ, ♏ xx. M.
Magnesiæ, ʒj.

ft. Mistura. Sumantur cochlearia duo media bis terve in die.

† 9. ℞ Pulv Aloes Spicat. gr. vi.
—— Zingib. gr. iij. M.
Syrup. Rhamni, q. s.

ft. Massa, in pilulas duas dividenda.

* 6. Take Magnesia, one drachm.
Powdered Rhubarb eight grains.
Compound Powder of Cinnamon, five grains.

Mix them. This powder is to be taken occasionally, as the case may require.

Or,

7. Take Magnesia, half a drachm.
Powdered Rhubarb, ten grains.
Peppermint Water, one ounce and half.

This draught may be taken whenever there is occasion.

Or,

8. Take Peppermint Water, 7 ounces.
Tincture of Gentian, ½ an ounce.
Solution of Potass, thirty drops.
Magnesia, one drachm.

Of this mixture two desert-spoonsful may be taken twice or thrice a day.

† 9. Take Powder of Socotrine Aloes, six grains.
———— Ginger, three grains.
Syrup of Buckthorn, a sufficiency to form the mass, which divide into 2 pills.

bring on a general increase of action, indicated by a flushing in the face, fulness in the circulating vessels, and relief of the dyspeptic symptoms; and the disorder will at length terminate in a fit of the gout, which is the crisis to be wished for.

The effect of the Bath waters as a medicine in erratic or wandering gout, is as strongly marked as the action of any medicine can possibly be by its effects; and in the most distressing cases, which have baffled the intentions of medicine and various means at a distance, the internal exhibition of the waters has appeared to concentrate the whole gouty virus, and fix in one point.*

In various cases of gout, especially where the high inflammation of particular limbs has gone off, and where it has left either a number of dyspeptic symptoms, or a rigidity or impaired action in the seat of the disease, an internal use of Buxton water has been recommended. As an external application in gout, it has also been found serviceable in restoring the functions to parts so diseased.

In the sciatica, or gout affecting the hip, we may recommend frequent blistering along the course of the sciatic nerve, together with electricity.

In severe attacks of atonic gout, some practitioners have advised the application of blisters to the lower extremities; but they ought to be avoided in those cases which are attended with much pain in the parts. Sinapisms, pediluvium, together with wine and other stimulants, have also been recommended in atonic gout for bringing the disease to the extremities.

The greatest attention should be paid to promote perspiration and avoid cold; and this is most effectually done by warm clothing, joined to moderate exercise. A flannel shirt with a pair of stout shoes, and thick woollen or fleecy hosiery stockings, will be necessary articles of attire for those who cannot remove in the winter to a warmer climate.

When the stomach or intestines become affected in consequence of retrocedent gout, immediate relief ought to be attempted by making the patient drink freely of wine, or even brandy, joined with aromatics. In affections of this nature, strong spirits impregnated with assafœtida or garlic, may also be given with much advantage. Opiates† joined with aromatics, or with camphor,

* See Dr. Falconer's Work on the Bath Waters
—— Practical Treatise on the same by Mr. J. H. Spry.

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† 10. ℞ Opii, gr. j.
Camphoræ, gr. v.
Ammoniæ Subcarbon. gr. vj.
Confect. Aromat. gr. v. M.
ft. Bolus, pro re nata adhibendus.

Vel,

11. ℞ Misturæ Camphoræ, f. ℥ jss.
Ammoniæ Subcarbon. gr. x.

† 10. Take Opium, one grain.
Camphor, five grains.
Subcarbonate of Ammonia, six grains.
Aromatic Confection, five grains.
Make them into a bolus, to be taken when requisite.

Or,

11. Take Camphor Mixture, one ounce and a half.
Subcarbonate of Ammonia, ten grains.

musk, or ammonia, may be of service. From one to four teaspoonsful of equal parts of camphorated tincture of opium, and ammoniated tincture of guaiacum, in any suitable vehicle, will be a proper medicine. Æther will likewise be a useful remedy. At the same time that we administer these medicines internally, warmth should be applied externally to the region of the stomach by hot cloths, fomentations, or a bladder filled with warm water, and hot bricks wrapped in flannel must be put to the feet. Frictions with brandy or the linimentum ammoniæ fortius over the stomach, will also be proper. If nausea and vomiting come on, the stomach is to be relieved by taking a few draughts of wine, somewhat diluted with warm water, having recourse afterwards to opiates combined with camphor.

In retrocedent gout, where the heart becomes affected, the above means may be adopted.

If there is a translation of the disease from the extremities to the head, so as to threaten apoplexy or palsy, a large blister ought to be applied to the back, as likewise small ones to the inside of the legs, with cataplasms to the soles of the feet; and the patient must take from twenty-five to forty drops of the spiritus ammoniæ aromaticus every three or four hours, or a combination of volatile alkali, æther, and aromatics, as specified in the formulæ before given, omitting the opium. About six drachms or an ounce of the tinctura aloes may also be taken as a gentle purgative.

When the gout attacks the lungs, and produces asthma, blisters should be applied to the breast or back, and stimulating cataplasms to the soles of the feet, and opiates and antispasmodics should be administered internally. From twenty to fifty drops of æther may be taken every two or three hours in a glass of wine, and an opiate* may be repeated as the necessity of the occasion requires.

In this particular retrocession of gout, where the attack is so severe as to threaten suffocation, as well as where there is a translation to the head, venesection might be resorted to with advantage.

Tinct. Opii, ℥ viij.
Spt. Æther. Sulph. ℥ xx. M.

ft. Haustus, tertia quaque hora sumendus.

Vel,

12. ℞ Moschi, gr. v. solve in
Misturæ Camphor. ʒx. Dein adde

Spirit. Ammon. Aromat. ʒss.

Tinct. Opii, ℥ viij. M.
ft. Haustus.

* 13. ℞ Confect. Aromat. ʒss.

Aq. Cinnam. f. ℥ jss.

Tinct. Opii, ℥ xx. M.
ft. Haustus.

Tincture of Opium, twelve drops.
Spirit of Sulphuric Æther, thirty drops. Mix them.
Take this draught every three hours.

Or,

12. Take Musk, five grains: dissolve it in Camphorated Mixture, ten drachms.
Then add
Aromatic Spirit of Ammonia, half a drachm.
Tincture of Opium, twelve drops.
Mix them for a draught.

* 13. Take Aromatic Confection, half a drachm.
Cinnamon Water, one ounce and a half.
Tincture of Opium, thirty drops.
Mix them for a composing draught.

In severe cases of a sudden translation or metastasis of gout from the extremities to any vital part, such as the head, heart, lungs, or stomach, it may be justifiable to excite a counter-irritation by the external application of nitric acid, as has lately been practised in the cholera morbus of Hindostan, (see Cholera,) in preference to a blister of cantharides, which acts slowly, and requires a lapse of some hours to produce vesication.

Where the disease attacks the kidneys, and imitates a fit of the gravel, the patient ought to keep warm fomentations, or bladders filled with warm water, constantly applied over the parts affected; he should drink freely of tepid diluting liquors; and an emollient clyster, with an addition of a small quantity of tinctura opii, ought frequently to be injected. In order to alleviate the pain, thirty or forty drops of the same tincture may likewise be taken by the mouth in any kind of vehicle.

During paroxysms of the gout, the treatment must be active and appropriate; after they have subsided, the remaining duty to be performed, is the restoration of the healthy state of the digestive functions, and of due strength in the weakened limbs. In such cases and circumstances as do not forbid the use of steel, from too much vascular fulness and action, the ammoniated tincture of iron may be taken advantageously in a little warm water, in doses of twenty drops, gradually increased to about sixty.

The gout imitates many diseases, as has already been observed; and by being mistaken for them and treated improperly, is often diverted from its regular course, to the great danger of the person's life; for which reason, those who have had the gout ought to pay particular attention to any complaint that may happen to take place about the time they may have reason to expect another attack of it. Those likewise who never had the gout, but who, from constitution or manner of living, have reason to expect it, ought also to be very circumspect with regard to its first approach, as by any wrong conduct, or improper treatment, it might be diverted from its right course, and be thrown upon some vital part.

To render the recurrence of gouty paroxysms less frequent, and their attacks less severe, we may rest assured that more is to be done by temperance in diet, cheerfulness and serenity of mind, a moderate exertion only of the intellectual faculties, an early hour of retiring to rest, obviating costiveness as the occasion may require, and by regular moderate exercise, than by any other means whatever, being at the same time attended with greater safety. The exercise must be suited to the condition of the patient. Walking will certainly be the best; but if he be unable to use it, he must employ some other kind, as riding on horseback, or in a carriage. Although walking may probably be irksome at first, and the feet feel tender, yet by perseverance it will become more agreeable, and great advantage will be derived. When no exercise can be taken, some benefit may possibly arise from frictions.

In those who have an hereditary predisposition to gout, it is

certain that it may often be prevented from taking place by paying an early and strict attention to regimen, temperance, and exercise; and even after it has shown itself by a regular attack, its returns may possibly be prevented for the remainder of life; but it is only those who have sufficient resolution to observe a steady perseverance in such a course, that can have any reason to expect a cure.

Exercise in persons disposed to the gout, not only strengthens the system, but tends likewise to prevent plethora. To prove advantageous, it must, however, be constant, regular, and continued through life, and should only be moderate. In the beginning of the disease, when the disposition or tendency to it is not strong, exercise will often prevent an attack which might otherwise have taken place, and in the intervals it will always be proper as long as the patient retains the use of his limbs. In a more advanced stage of the disease, where there is an evident disposition to a paroxysm, much walking ought to be avoided, as it might tend to hasten its approach, by increasing the inflammatory disposition in the lower extremities.

While the vigour of the system still remains unimpaired, either by intemperance or frequent attacks of the gout, an abstinence from animal food may be entered upon with safety, in order to prevent a recurrence of the disease; but if this abstinence shall not have been adopted until the constitution has been hurt by intemperance, frequent fits, or the decline of life, it certainly will prove injurious, and might tend to bring on an irregular attack. A sudden change from a full to a spare and low diet, will in all cases whatever be highly improper; and whenever an alteration is made in the mode of living, it ought to be done in a gradual manner.

Where an abstinence from animal food is to be observed, a diet consisting of milk and the farinaceous seeds will be the most proper, and all kinds of spirituous and fermented liquors are to be avoided; but where custom or a declining state of the system has rendered them absolutely necessary along with the use of animal food, they are then to be used with moderation.

Besides regimen and exercise, it will be necessary for the patient to observe universal temperance; he is to shun night studies, and all excess in sensual gratifications; he should go to bed betimes, and rise early; and he should avoid all exposure to cold, but more particularly getting wet in the feet. In the gout, as well as in regard to all other diseases, the cardinal rules in preserving the health are founded on temperance and exercise, on the choice of all those means which are found by the individual to invigorate the system, and the shunning whatever injures and enfeebles it.

Some persons much disposed to gout, who have been reduced to poverty and obliged to work hard and use a low diet, have been cured by it; which clearly demonstrates the efficacy of exercise, temperance, and a spare regimen.

RHEUMATISMUS, OR RHEUMATISM.

THE characteristics of rheumatism, as assigned by Dr. Cullen, are pyrexia, pain about the parts following the track of the muscles, attacking the knees and larger articulations, in preference to those of the feet or hands, increased by external heat.

The disease is distinguished into the chronic and the acute; being known by the former appellation when there is no great degree either of inflammation or fever present, but merely pains; and by the latter, when both fever and inflammation exist in a high degree.

It may arise at all times of the year, when there are frequent vicissitudes of the weather from heat to cold; but the spring and autumn are the seasons in which it is most prevalent: and it attacks persons of all ages; but very young people are more exempt from it than adults. Those whose employments subject them to alternations of heat and cold, are particularly liable to rheumatism.

Although acute rheumatism somewhat resembles the gout, still in some respects it differs from it. It does not usually come on so suddenly as a fit of the gout, but for the most part gives the patient warning by a slow and gradual increase of pain. Neither is it fixed to one spot like the gout, but is distinguished by its frequent wanderings from place to place, accompanied by a sense of numbness. It seldom attacks the small joints, but is confined chiefly to the larger, as the hips, knees, and shoulders. Acute rheumatism is generally attended with a continued fever; whereas the gout has periodical remissions. Like most of the pyrexiæ, it is preceded by rigors, and a sense of cold. A febrile, quick, and hard pulse supervenes; the veins near the part affected swell; and a throbbing pain is felt in the arteries. By degrees the pain increases, and the patient suffers cruel torture, which is increased on the least motion. The sense of pain resembles that of a slow dilaceration of the parts, and commonly goes off by a swelling of the joint or joints. The rheumatism, moreover, is not preceded by dyspeptic symptoms, as is usually the case with the gout; neither do chalky concretions form about the small joints and fingers, as in the latter.

Obstructed perspiration,—occasioned either by wearing wet clothes, lying in damp linen, sleeping on the ground or in damp rooms, or by being exposed to cool air when the body has been much heated by exercise, or by coming from a crowded room or public place into the cool air,—is the cause which usually produces rheumatism. Those who are much afflicted with this complaint are very apt to be sensible of the approach of wet weather, by finding wandering pains about them at that period: in fact, some are living barometers.

The proximate cause, of the acute species of the disease at least,

is supposed to be an inflammation of the membranes and tendinous aponeuroses of the muscles.

Acute rheumatism usually comes on with lassitude and rigors, succeeded by heat, thirst, anxiety, restlessness, and a hard, full, and quick pulse; the blood, when drawn from a vein, exhibits an inflammatory surface upon cooling, and the tongue preserves a steady whiteness; after a short time excruciating pains are felt in different parts of the body, but more particularly in the joints of the shoulders, wrists, knees, and ankles, or perhaps in the hip; and these keep shifting from one joint to another, leaving a redness and swelling in every part they have occupied, as likewise a great tenderness to the touch. Towards evening there is usually an exacerbation or increase of fever, and during the night the pains become more severe, and shift from one joint to another.

Sometimes the pain is confined to a few joints; in other cases it affects many at the same time. In no disease do we meet with such remarkable instances of metastasis, and no muscular part is exempted from the pain. The internal muscles, as the diaphragm and heart, have been said to be sometimes affected with metastasis. In these translations of rheumatic inflammation, the stomach is also sometimes attacked. The pain is met with in every degree of violence, and is highly aggravated by pressure or motion. The face in general is not flushed, there is seldom much headach, and in most cases there seems to be little tendency to delirium.—The stomach generally is not affected, but the bowels are usually costive.

Early in the course of the disease some degree of sweating usually occurs: but it seldom removes the pains, or proves either salutary or critical; and it is somewhat singular that the pained limbs remain dry, when a sweat is on the rest of the body. In the beginning the urine is without any sediment; but as the disease advances in its progress, and the fever admits of considerable remissions, a lateritious sediment is deposited; but neither does this prove critical.

Chronic rheumatism is attended with pains in the head, shoulders, knees, and other large joints, which at times are confined to one particular part, and at others shift from one joint to another without occasioning any inflammation or fever; and in this manner the complaint continues often for a considerable time, and at length goes off, leaving the parts which have been affected in a state of debility, and very liable to fresh impressions on the approach of moist damp weather.

Little danger is attendant on chronic rheumatism; but a person having once been attacked with it, is ever afterwards more or less liable to returns of it, and an incurable anchylosis is sometimes formed in consequence of very frequent relapses. Neither is the acute rheumatism often accompanied with much danger, as it usually goes off spontaneously, or is removed by the timely em-

ployment of proper remedies; but in some instances the patient has been destroyed by general inflammation, and now and then by a metastatis to some vital part, such as the head, lungs, heart, and stomach. Many cases of cardiac inflammation are indeed either combined or alternated with acute rheumatism. It has been observed, that persons subject to rheumatism are attacked more frequently than others with symptoms of an organic disease in the heart; and that in some instances the lungs have been much affected with severe dyspnœa, no doubt from the disease being translated to these parts, occasioning real inflammation of these organs.*— When retrocession actually occurs, there is no safety until the disease is removed, and the prognosis ought therefore to be very guarded indeed. Acute rheumatism, although accompanied with a considerable degree of inflammation in particular parts, has seldom been known to terminate in suppuration; but a serous or gelatinous effusion sometimes takes place.

A general, but not unnaturally profuse perspiration, the deposit of a lateritious or furfuraceous sediment in the urine, eruptions on the skin, or moderate hæmorrhage of blood from the nose or other parts, may be regarded as favourable symptoms; whereas the inflammation becoming erysipelatous, and assuming a dark red or rose colour, and this followed by vesications, metastasis of the inflammation to the head, chest, or abdominal viscera, producing the symptoms of the idiopathic diseases of these organs, are to be looked upon as unfavourable.

Rheumatism seldom proving fatal, very few opportunities have offered for dissections of the disease. In the few which have occurred, the same appearances have been observed as those mentioned under the head Inflammatory Fever. In the joints, thickening of the membranes, adhesions, and gelatinous effusions, are the only phenomena to be met with.

The principal thing to be attended to in the treatment of acute rheumatism, is to obviate the general inflammation which prevails; and this is to be effected by strictly pursuing an antiphlogistic regimen, and by blood-letting in all cases where the vascular action is strong, the constitution robust, and the heat considerable; proportioning the quantity we take away to the violence of the symptoms, and the age, strength, and habit of the patient. If the pains continue very severe, and the pulse full, hard, and quick, after bleeding, and the blood appears very sizy on becoming cool, we may with great propriety repeat the operation either on the same day or the next; but this mode of proceeding should be adopted only at an early period of the disease. The reduction of vascular action is, however, more particularly to regulate the repetition, than the buffy appearance of the blood, which in many cases continues to increase, notwithstanding the abstraction of blood, and is not diminished by bleeding. This circumstance

* See Medico-Chirurgical Transactions, vol. i.

should be attended to. To repeat bleeding until the pulse be reduced to 100 or a little below, may be a good rule.

In weak irritable habits, where no great degree of general inflammation prevails, and little or no fever attends, and where the inflammation is chiefly local, or the pain not violent, topical bleeding, by means of several leeches applied to the part affected, may be substituted instead of using the lancet, and will often be found to afford essential relief. Moreover, they are not attended with the risk of causing translations of the disease. They may likewise be used with benefit where much inflammation prevails in the system, as well as in particular parts, provided that some general bleeding has been premised or adopted. When leeches cannot be procured, scarifying and cupping may be employed in their stead.

It has been usual in acute rheumatism to rely principally on large and repeated bleedings at an early period, joined with an antiphlogistic regimen; and no doubt this evacuant plan of treatment has in some cases been carried to excess, and produced an alarming degree of debility. Having reflected much on this circumstance, and well considered the wonderful power which the digitalis possesses of diminishing the action of the heart and arteties, I have employed it in some severe cases of acute rheumatism after one or two bleedings from the system, and with much apparent advantage; for I found that its use rendered any further repetition of venesection unnecessary. In the instances to which I allude, from ten to twenty drops of its tincture were given every four or six hours.

In case of costiveness prevailing, one or two evacuations should be procured daily by making use of some gentle cooling purgative, such as the neutral salts, or by giving laxative clysters, which may be the preferable way when the disease is general and violent, as the motion occasioned by frequently getting up to stool would prove irksome and painful to the patient.

Where the pain is chiefly confined to one part, and is unaccompanied by much inflammation, the application of a blister will be likely to prove serviceable, or we may rub it with some kind of rubefacient liniment;* but where the pains are wandering, and there are frequent translations from one joint to another, neither

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* 1. ℞ Spirit Camphoræ, f. ℥ij.
Liquor. Ammon. f. ℥ss.
Essent. Ol. Rosmarin. ♏x. M. ft. Linimentum.

Vel,

2. ℞ Ol. Olivæ, f. ℥iij.
— Terebinth. f. ℥j.
Acid. Sulph. ♏x. M.

Vel,

3. ℞ Ol. Olivæ, f. ℥ij.
Camphoræ, ℥ij. Solv. et adde

* 1. Take Camphorated Spirit two ounces.
Solution of Ammonia, half an ounce.
Oil of Rosemary, fifteen drops.
Mix them for a Liniment.

Or,

2. Take Olive Oil, three ounces.
Oil of Turpentine, one ounce.
Sulphuric Acid, fifteen drops.
Mix them.

Or,

3. Dissolve Camphor, two drachms, in Olive Oil, two ounces, and add

of these remedies will be of much use. In acute rheumatism, warm fomentations ought never to be employed, as they are found to aggravate the pains instead of alleviating them.

Where, on the sudden subsidence of the external pain and inflammation, the head, heart, lungs, or stomach are attacked, so as to endanger the life of the patient, blisters should always be applied near those parts where the disease had originally existed, their power of counter-irritation being useful on such an occasion. Their action being, however, very slow, it might be justifiable in such cases, as well as in gouty metastases, to substitute the external application of nitric acid, in the manner mentioned to have been practised of late in the cholera morbus which prevailed in Hindostan.—See this disease.

When any of the joints of the extremities swell very much, and are highly painful, we may, besides drawing blood from the part by means of leeches, make use of attenuating cataplasms, such as the cataplasma farinæ compositum* of the Pharmacopœia Chirurgica; the ingredients of which, being wrought into a paste with hot water, are to be wrapped round the part affected, and to be renewed morning and evening.

The reduction of heat by keeping linen cloths wetted in cold water, or in a solution of muriated ammonia, with the nitrate of potass, constantly to the inflamed parts, may, I think, be adopted with safety and much advantage in acute rheumatism, although in gout the remedy ought certainly to be looked on as hazardous.—During the summer of 1807 I visited Russia for a few months, and understood that the physicians there are in the habit of recommending the application of snow or pounded ice in cases of this nature, and often with a very good effect.

When rheumatic inflammation is local and stationary, the aid of cold applications, or of the evaporating treatment with camphor mixture, conjoined either with alcohol or æther, made tepid, as noticed under the head of Gout, will be likely to prove very beneficial; but when the inflammation quickly wanders from one part to another, almost eluding our pursuit, we must rely more confidently on constitutional means, and make our local treatment accordingly both more subservient and considerate.

After the necessary evacuations have been made, diaphoretics may then be used; and either those of the antimonial kind, as advised under the head of Simple Fever, may be prescribed in small

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Tinct. Cantharid. f. ℥j.
Liquor. Ammon. f. ℥ss. M.

* 4. ℞ Farinæ Secalis, ℔j.
Fermenti Veteris Acris, f. ℥iv.
Natri Muriati, ℥ij. M.
ft. Cataplasma.

Tincture of Spanish Fly, one drachm.
Solution of Ammonia, half an ounce.
Mix them for a Liniment.

* 4. Take Rye Flour, one pound.
Stale Vinegar or Beer, four ounces.
Muriated Natron, two ounces.
Mix them for a cataplasm.

and frequently repeated doses, or from ten to fifteen grains of the pulvis ipecacuanha compositus* may be given every three or four hours. This indeed appears to be the best sudorific we can exhibit in acute rheumatism. Volatiles are employed by some practitioners in the cure of rheumatism, for the purpose of exciting a diaphoresis. With the same view camphor has been likewise administered. They may be given separately, or be combined together, agreeably to the formulæ advised below,† should the remedies before recommended not prove sufficiently powerful. To increase the effect of all these medicines, the patient should at the same time be enveloped in flannel, every article of linen being removed: and as soon as he begins to sweat, and not before, lest vomiting be induced, he ought to drink freely of diluents, such as herb tea, barley-water, and wine whey.

As an auxiliary remedy, warmth applied to the extremities, especially to the affected parts, is of some consequence. It may be employed either in the form of fomentations, or in a dry one, by warm bottles, or bricks wrapped in flannel.

Sweating is an evacuation which is resorted to very generally both in the acute and chronic rheumatism, and in many instances

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* 5. ℞ Pulv. Ipecac. C. gr. x.

Confect. Rosæ, gr. xij.
Syrup, q. s. M.
ft. Bolus, 3tia vel 4ta hora sumendus, superbib. cochl. iij. Misturæ sequentis :—

6. ℞ Succ. Limon. f. ℥jss.

Ammoniæ Subcarbonat. ℈j.

Aq. Fontan. f. ℥ivss.

Potassæ Nitrat. ℈ss.
Syrup. Simpl. f. ℥ss. M.
ft. Mistura.

† 7. ℞ Ammoniæ Subcarbon. gr. x.

Pulv. Antimon. gr. ij.
Confect. Rosæ, q. s. M.
ft. Bolus, 4tis horis sumendus.

Vel,

8. ℞ Seri Lactis Vinos. f. ℥x.
Liq. Ammon. Subcarb. ♏xx. M.

Bibat æger hora decubitûs.

Vel,

9. ℞ Mistur. Camphoræ, f. ℥j.
Liquor. Ammon. Acetat. f. ℥iij.

Vini Antimon. Tart. ♏xv. M.

ft. Haustus, 4ta vel 6ta quaque hora repetendus.

* 5. Take Compound Powder of Ipecacuanha, ten grains.
Confection of Roses, twelve grains.
Syrup, a sufficiency to form a bolus, which may be taken every three or four hours, washing it down with three large spoonsful of the following Mixture :—

6. Take Lemon Juice, one ounce and a half.
Subcarbonate of Ammonia, one drachm.
Pure Water, four ounces and a half.
Nitrate of Potass, half a drachm.
Syrup, half an ounce.
Mix them.

† 7. Take Subcarbonate of Ammonia, ten grains.
Antimonial Powder, two grains.
Confection of Roses, a sufficiency to form a bolus, which may be taken every four hours.

Or,

8. Take Wine Whey, ten ounces.
Solution of the Subcarbonate of Ammonia, thirty drops.
Mix them, and let the patient drink the whole on going to bed.

Or,

9. Take Camphor Mixture, one ounce.
Solution of the Acetate of Ammonia, three drachms.
Wine of Tartarized Antimony, twenty-two drops.
Mix them for a draught, to be repeated every four or six hours.

with very essential benefit; but it has its inconveniences, for sometimes it comes out freely without producing any good effect, and when long continued it relaxes the skin, and makes the patient very susceptible of cold afterwards: to guard against which, it will be necessary for him to be confined to his chamber, and to wear a flannel shirt for some time.

In the early stage of the disease it is desirable to procure perspiration by diaphoretics of the antimonial kind, or the compound powder of ipecacuanha joined to saline medicines; and in some cases material relief has been obtained thereby. If, however, obvious benefit does not ensue within forty-eight hours, we ought then to discontinue the use of diaphoretics, as being more likely to do injury than good. Every local means to increase perspiration ought also after this period to be avoided, whether by a use of flannels, hot applications to the painful parts, or the warm bath. Instead of them, linen cloths dipped in camphor mixture and cold water may be applied.

Opiates combined with camphor are given by many practitioners in acute rheumatism; but such a compound is not likely to prove efficacious; and the best way of administering opium in this disease when the pain is considerable, is by using the pulvis ipecacuanhæ compositus, as has just been mentioned, or by giving it combined with antimony.* Other narcotics, such as conium, hyoscyamus, aconitum, and digitalis, are sometimes employed with seeming advantage after the bowels have been freely evacuated.

A peculiar mode of treating every case of acute rheumatism, by a liberal and early use of the bark of cinchona, had been adopted as well as recommended, by a late celebrated reader of Lectures on the Practice of Physic.† He informs us, in his Third Dissertation on Fever, that for the last fifteen years he had entirely left off bleeding in this disease, and that he had not lost above two or three patients although he treated several hundreds who laboured under it in this way; and he adds, that when he practised bleeding largely in acute rheumatism, metastases were very apt to take

† Dr. George Fordyce.

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* 10. ℞ Pulv. Antimonial. gr. ij.—iij.
Opii, gr. ss.
Confectionis Rosæ, q. s. M.
ft. Pilula, 6ta quaq. hora sumenda cum haustu salino communi.

Vel,

11. ℞ Liquor. Ammon. Acetat. f. ℥iij.
Aquæ Menth. Virid. f. ℥j.
Vini Antimon. Tart. ♏xv.
Tinct. Opii, ♏xx—xxx.
Syrup. Simpl. f. ℥ij. M.
ft. Haustus, hora somni adhibendus.

* 10. Take Antimonial Powder, from two to three grains.
Opium, half a grain.
Confection of Roses, a sufficiency to form these into a pill, which is to be taken every six hours, washing it down with the common saline draught.

Or,

11. Take Solution of the Acetate of Ammonia, three drachms.
Mint Water, one ounce.
Wine of Tartarized Antimony, twenty-two drops.
Tincture of Opium, thirty to forty-five drops.
Common Syrup, two drachms.
Mix them, and give the draught at bed-time.

place, and to destroy the patient; which accident had rarely happened since he discontinued its use.

With due deference to so high an opinion, I am however induced to think, that where the inflammation of the system is great, the pulse quick and full, and the person young and of a robust constitution, early venesection (the quantity of blood to be abstracted being duly proportioned to the circumstances of the case) is not only necessary in attacks of acute rheumatism, but that those who fall victims to it die frequently from its not having been adopted.

Another advocate for a very early use of the bark of cinchona in this disease is Dr. Haygarth; who tells us,* that for several years his usual method of treating acute rheumatism has been to give either the antimonial powder or tartarized antimony, generally the former, till the stomach and bowels are sufficiently cleansed: without waiting for any other evacuation, or abatement either of the inflammation or the fever; he then orders the cinchona bark, at first in small doses, and if they succeed, gradually in larger; but if it disagrees in any respect, or does not produce manifest relief of the symptoms, the bark is suspended, and the antimony again repeated till it shall have produced sufficient evacuations. After cleansing the stomach and bowels a second time, he administers the bark again, at first sparingly, and then more freely. He never continues it longer nor in larger quantity than what perfectly agrees with the stomach, the fever, and the rheumatic inflammation. Dr. Haygarth cautiously adds, however, that if doubts occur on any of these points, it will be advisable to have recourse to bleeding by the lancet or leeches, or both, and to more evacuations by antimony. In such cases the cinchona is not to be again employed till the inflammatory symptoms are abated.

Our author assures us, that with the exception of a very few cases, this bark has uniformly produced the most salutary effects. The pains, swellings, sweats, and other symptoms of inflammatory fever, manifestly and speedily abated, and gradually ceased, till health was perfectly restored. The evidence adduced by him is much in favour of the cinchona as a remedy in acute rheumatism.

It appears that Dr. Haygarth began to administer cinchona in the acute rheumatism in 1772, at first cautiously, and, as it manifestly produced salutary effects, more freely, upon the recommendation and high authority of that very eminent physician Dr. John Fothergill.† In the last edition of his Clinical History of Acute Rheumatism, Dr. Haygarth has adduced the most respectable testimony‡ in favour of this practice. The late Sir George Baker (who learned this method of treating the disease from Sir Edward

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* See Dr. Haygarth's Clinical History of Acute Rheumatism.
† Ibid. pp. 59—72
‡ Ibid. pp. 141—155.

Wilmot,) Dr. Heberden (who quotes the recommendation of his father,) Dr. Saunders, Dr. Willan, Sir Lucas Pepys, Dr. Lettsom, Sir Walter Farquhar, and Dr. Aikin, have all of them administered cinchona at an early period of acute rheumatism with very salutary effects. A late author* also confirms the utility of this practice from his own observations. But this mode of treatment, Dr. Haygarth observes, being directly contrary to medical theories, even successful experience by the most learned and sagacious physicians has not yet prevailed against established doctrines, and the practice is but partially adopted.

By most physicians the use of cinchona bark, during the inflammatory state of acute rheumatism, has been disapproved of; and it is only after the inflammatory diathesis has been subdued by antiphlogistic remedies, and where at the same time the exacerbations of the disease are periodical, with considerable remissions interposed, that its use has been thought proper.

Since the first edition of this work appeared before the public, I have been much in the habit of administering the cinchona, joined with nitre,† in acute rheumatism, and generally with a very happy effect. I would therefore recommend this combination of medicine at an early stage of the disease, in preference to giving the bark separately; but I do not advise the use of it even in this way, until the inflammatory symptoms have been somewhat counteracted by the antiphlogistic remedies which have been pointed out. Where there are intermissions of pain, a clean and moist tongue, a perspiring skin, and a lateritious sediment in the urine, the use of this remedy is clearly indicated, and should no longer be delayed. In some cases I have of late employed it with much benefit, combined with the oleum terebinthinæ.‡

Dr. Hamilton, of Lynn Regis, informs us,‖ that in those cases of acute rheumatism where blood-letting and sudorifics have been

* See Granger's Medical and Surgical Remarks, pp. 240—267

‖ See vol. ix. of the Edinburgh Medical Commentaries.

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† 12 ℞ Pulv. Cinchonæ, ʒss.—ʒj.

Potassæ Nitratis, gr. x. M.
ft. Pulvis, 4tis horis repetendus.

Vel.

12. ℞ Decoct. Cinchon. f. ℥iss.

Potassæ Nitratis, gr. xij. M.
ft. Haustus.

‡ 14. ℞ Decoct. Cinchonæ, f. ℥iss.

Pulv. ejusdem, ℈j.

Ol. Terebinth. ♏ xv.—xxv. M.

ft. Haustus, sextis horis adhibendus.

† 12. Take Powder of Peruvian Bark, half a drachm to one drachm.
Nitrate of Potass, ten grains.
Mix them, and repeat this powder every four hours.

Or,

13. Take Decoction of Peruvian Bark, one ounce and a half.
Nitrate of Potass, twelve grains.
Mix them for a draught, to be taken as frequently as the former.

‡ 14. Take Decoction of Peruvian Bark, one ounce and a half.
Powder of the same, one scruple.
Oil of Turpentine, twenty-two to eight and thirty drops.
Mix them, and give the draught every six hours.

pushed as far as may be thought prudent, without being productive of the desired effect, and where a sufficient remission cannot be obtained so as to give the cinchona bark, very great benefit is often to be derived from the use of the submuriate of mercury, combined with opium; which combination he has frequently employed in the proportion of from five grains to one of the former, and from one to one-fourth of the latter, according to the age and strength of the patient; and administered every six, eight, or twelve hours, as the degree of inflammation, or the threatening aspect of the disorder, seemed to require. Along with this remedy he enjoins a plentiful dilution with barley-water, or any other weak tepid beverage,

Early and moderate venesection, succeeded by gentle purgatives, calomel, opium, and antimony, is perhaps the best plan that can be pursued in acute rheumatism.

In acute rheumatism the patient must be kept on a cool spare diet, as milk, whey, buttermilk, light vegetable matters, panado, ripe fruits, &c.; animal food and fermented liquors should be avoided.

A different mode of treatment from what has been advised in acute rheumatism must be adopted in the chronic species. Here bleeding from the system will neither be necessary nor proper.

Where the ligaments and membranes of the joints are the peculiar seat of the disease, or an enlargement of the extremities of the bones has taken place, the first attempt at relief, especially in young and vigorous subjects, should be directed to local bleeding, either by leeches, or, what is to be preferred, the operation of scarifying and cupping. When the pain and irritation are abated by repeated bleeding, no time should be lost in securing a drain from the part by the aid of issues, making them with caustic in preference to the knife. In hip cases of long standing, as well as in obstinate ones of sciatica, the same practice will be found highly beneficial.

In most cases it will be advisable to rub the parts which are the seat of the disease several times a day with some rubefacient liniment, as prescribed in acute rheumatism, after which they are to be enveloped in flannel. The regular use of a flesh-brush, with electricity or galvanism, may be requisite in cases of long standing, and where there is any rigidity in the parts.

Exercise either of the whole body or of particular limbs will be highly important. As an exercise for the arm, the dumb-bells answer very well. For the lower extremities none will answer better than walking; and although it may prove a little irksome at first in some cases, still by perseverance much benefit will soon be experienced. The want of exercise is apt to induce stiffness in the limb.

Frictions with acetic æther on the painful parts have been employed in France with much benefit, particularly in cases of

sciatica and lumbago. The remedy is reported* to possess the advantage of producing an agreeable heat on the skin, and a very useful perspiration, without augmenting the irritation or erythism in the parts.

Camphor dissolved in æther, and applied externally in painful affection of the joints, has likewise afforded singular relief in a great variety of instances.

The ointment and embrocation of tartarized antimony may afford relief, and have the property of producing a crop of pustules wherever they are rubbed, and when this effect is procured, they ought of course to be discontinued.

Immersing the whole body in a warm bath, or applying it topically, by pouring warm water upon the limb from a kettle several times a day, has in many instances proved very useful; together with proper exercise, either of the part itself, or of the whole body, if the patient is capable of taking it. A quarter of an hour, or twenty minutes, will be sufficient time to remain in the bath, the temperature of which may at pleasure be varied from 90 degrees to 114. This scale appears sufficiently extensive in all cases to ensure the beneficial effects to be expected from the use of a tepid or hot bath.

If the pains are of a recent date, and chiefly attack the muscles and thin membranous coverings, occasionally shifting from one part to another, and the strength is at the same time but little reduced, there can be no doubt that a moderate use of the warm bath may be serviceable; but where it proves unsuccessful after two or three trials, it ought to be discontinued. In soothing pain, relaxing the stiffened joints and rigid fibres, particularly in elderly patients whose strength has been much reduced by the length and violence of the disorder, a tepid bath of from 84 to 90 will often prove a useful auxiliary to the other means we employ.

Both remedies however may, I think, be considered of inferior value in the cure of rheumatism, when compared with the topical, and sometimes general use of hot water in the form of vapour. Whenever the joints are very rigid, and the pain upon motion exquisitely severe, or where the muscles have become contracted and almost paralytic; and indeed in all protracted cases of the disease of the hip joint, lumbago, or sciatica, the vapour of hot water, locally and properly applied, will seldom fail, in conjunction with other proper topical applications, to prove a safe and successful remedy. The mode of applying it must be regulated according to circumstances. A large boiler with a pipe affixed to it forms a simple apparatus. With this the parts affected may be steamed for about half an hour at a time, repeating the process two or three times a day.

A vapour bath, constructed agreeably to the plan advised by the Honourable Basil Cochrane,† or in the Russian manner, would

* See Recueil Périodique de la Société de Médecine de Paris, No. xlviii.

† See his pamphlet on Vapour Baths.

be a great acquisition in all infirmaries and hospitals. The latter is very simple. The building usually consists of a wooden house, situated, whenever it is possible, by the side of a running stream. In the bath-room is a large vaulted oven, which, when heated, makes the paving-stones lying upon the top of it red hot; and adjoining to the room is a kettle fixed in masonry for the purpose of holding boiling water. Round about the sides of the room are a few rows of benches one above another, like the seats of an amphitheatre. Little light is admitted, but here and there are apertures for permitting the vapour to escape, the cold water which is wanted being let in by small channels.

The heat of the bath-room is usually from 32 to 40 degrees of Reaumur's thermometer, that is, from about 114 to 132 of Fahrenheit's. Warm water is thrown every five minutes or so upon the hot stones, by which means the heat is somewhat increased, especially in the upper parts of the building. The bathers recline on the benches in a state of nature, and they perspire more or less in proportion to the heat of the humid atmosphere in which they are enveloped. To promote perspiration the better, and completely to open the pores, they are at first well rubbed with the hands, and then gently flagellated with leafy bunches of birch. After remaining awhile, they quit the sweating bench, and wash the body with warm or cold water. During my stay at Petersburgh, I observed that many of the Russians threw themselves immediately from the bath-room into the adjoining river. In the winter they roll themselves in snow, in a frost of ten or more degrees of Reaumur's thermometer: nor is the sudden change succeeded by illness, or productive of the least inconvenience to them.

In cases of chronic rheumatism, where great debility prevails, with deep-seated pain, the warm bath frequently renders the patient hot and restless, and seldom or never relieves, unless it induces sweat. Now the advantage of the vapour bath is, that perspiration takes place at a much lower temperature in it than the other: the vapour bath need not to be heated above 96 degrees to produce a salutary perspiration, whereas a warm bath seldom produces this discharge at a lower temperature than 100 degrees, and from that it is used up to 112 in some of the hot springs at Bath. Besides this increased heat applied to the skin when the exhalants are ready to yield their contents, the surrounding medium presses upon the cuticle, and in some measure prevents the flow of perspiration which it had brought on the surface: on the contrary, in the vapour bath the heat being applied to the body in an aëriform state, unites with the insensible perspiration as it arises by the exhalants, condenses upon the surface, and drops from the body by its own weight, meeting with no resistance from the elastic vapour.

After exposing the diseased parts for a due length of time to

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* See Treatise on Warm and Vapour Baths, by Dr. Kentish.

the action of vapour, and diligently rubbing in some rubefacient liniment during the operation, we may immediately after employ electricity, either in slight shocks, or by drawing sparks. Perhaps the latter may be the preferable way. The process being completed, the parts are then to be enveloped in flannel.

Dr. Bardsley, in his Medical Reports, mentions, that he has seen at the Manchester Infirmary several hip cases of long standing yield to the persevering use of topical bleeding by means of cupping and scarifying, with the aid of issues; but in order to remove the rigidity and want of tone which remained in the parts after the subsidence of the more violent symptoms, he was obliged to have recourse to the aid of vapour and electricity. In some very obstinate cases of sciatica, which resisted all other means of relief, he has also witnessed the happiest effects from issues; but, he observes, that he often found it necessary to surround the joints with several of these drains, moderating the degree of irritation and discharge according to the obstinacy of the disease and the strength of the patient.

The chronic rheumatism in all its forms succeeding to the acute, and where the inflammation has been chiefly seated in moving parts, is often wonderfully relieved by bathing in the Buxton waters; and the healthy action is soon so far restored as to enable the patient to use the more powerful remedy of sea-bathing, or the common cold bath. On account of the slightness of the shock of immersion, very delicate and irritable habits, and especially parts weakened by disease, can generally bear this degree of cold, and overcome it by a very small reaction; to produce which appears to be often a most salutary effort of the constitution. Hence the Buxton bath is become almost a technical term for any bath heated to the highest degree that is compatible with giving some sensation of cold when the body is first plunged into it.

The power of the bath water is chiefly confined to that species of rheumatism which is unattended by inflammation, or in which the patient's pains are not increased by the warmth of his bed. In all such cases, both bathing and pumping are very appropriate remedies, and where the joints have become stiffened, they will be likely to prove highly beneficial.*

Cold bathing has been advised by some physicians, while others again have disapproved of it. In some instances it has certainly proved very beneficial. The cold bath is a stimulant, and promotes perspiration, and by strengthening the body, prevents a relapse. While there are any febrile symptoms it should not be used.

The shower bath, with subsequent frictions and warm clothing,

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* See Dr. Haygarth's Observations on Rheumatic Fever.
Practical Treatise on the Bath Waters, by Mr. J. H. Spry.
Dr. Falconer's Treatise on the same Waters.

will be found not only a successful means of cure in many cases of chronic rheumatism, but also a very effectual preventive.

Blisters are sometimes employed in this complaint: but they seem to be most serviceable in those cases where the disease partakes of the nature of acute rheumatism, or where the pain is fixed in any particular joint. With respect to the mode of their application, it seems proper to observe, that a repetition of fresh blisters will be far preferable to keeping up a constant sore by stimulating the vesicated parts with the unguentum cantharidis; and in the former way we shall likewise produce greater effect upon the disease. In some instances it will be found more beneficial to apply the remedy at a little distance from the seat of the disease, than to lay it immediately on the affected part. Indeed, whenever the complaint seizes upon any of the larger and deep-seated muscles at their origin near the joints, applying blisters to the inferior extremities of such muscles, and near to the points of their insertion, will be found highly beneficial. Thus in recent and slight cases of sciatica, the application of a blister to the inferior extremity of the thigh-bone often proves speedily useful.

Acupuncturation (punctures made with needles) has been tried, and with complete relief in some instances of severe rheumatic pain occupying a fleshy part, such as the deltoid muscle. Before the pain has completely disappeared, it has, however, on some occasions, been necessary to introduce the needles every third or fourth day, for six or seven times.

Compressing the large arteries by means of a tourniquet, as mentioned under the head of Intermittents, is another remedy which has been employed with advantage* in some instances of severe rheumatic pains.

Several cases of chronic rheumatism of great severity and long standing, and which had resisted all previous means, but which were promptly and effectually removed by bandages of flannel round the diseased limb, carried from below upwards, are recorded by Dr. Balfour in the Edinburgh Medical and Surgical Journal,† as well as in a work published by him.‡ In applying them, he found it necessary in some instances, especially at the beginning, to roll them tighter than they could well be borne for any length of time, and in such cases the frequent removal of the bandages, with the aid of manual application of friction, and more especially of percussion in the intervals, he says, are indispensable. The practice of applying pressure by bandages, in his opinion, may prove a useful adjuvant or auxiliary to the other means, particularly warm bathing, for the removal of this painful disease.

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* See Dr. Duncan's Annals of Medicine for 1801.

† See No. xlii.

‡ See New Method of treating Rheumatism, by Wm. Balfour, M.D.

Where the knee or any other joint becomes enlarged from effusion, it ought to be diligently rubbed twice or thrice a day with about an ounce of the muriate of ammonia dissolved in twelve ounces of common vinegar.

The internal remedies which have been most generally recommended in chronic rheumatism are sudorifics and medicines of a stimulating nature, which abound in essential oils and resins; and therefore volatile alkaline salts, guaiacum, turpentine combined with cinchona and the like, may be administered as in the undermentioned formulæ.* In the most aggravated instances of this species of rheumatism, where great torpor and debility prevail, guaiacum, in as large doses as the stomach will bear, often proves a powerful remedy, when aided by topical applications. The ammoniated tincture of this medicine, joined to a strong decoc-

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* 15. ℞ Ol. Terebinth. f. ℥jss.

Vitell. Ovi, q. s.

Dein adde
Spirit. Junip. Comp. f. ℥j.

Decoct. Cinchon. f. ℥v. M.
ft. Mistura, cujus sumat. cochl. larg. ij. quarta quaq. hora.

Vel,

16. ℞ Tinct. Guaiac. Ammoniat. f. ℥ij.

Spirit. Cinnam. f. ℥ss.

Decoct. Cinchon. f. ℥j.
Vini Antimon. Tart. ♏ xvj. M.

ft. Haustus, bis terve die sumendus.

Vel,

17. ℞ Tinct. Guaiac. Ammoniat. f ℥ij. pro dos, in quovis vehiculo.

Vel,

18. ℞ Gum. Guaiac. ℈j.
Ammoniæ Subcarbonat. gr. x.

Confect. Rosæ, q. s. M.

ft. Bolus, mane et vespere adhibendus.

Vel,

19. ℞ Gum. Guaiac. gr. xv.
Pulv. Antimonial. gr. ij.
Confect. Opii, gr. x.
Syrup. q. s. M.
ft. Bolus.

Vel,

20. ℞ Gum. Guaiac. Pulv. ℈j

Pulv. Ipecac. Comp. ℈ss.

ft. Pulvis, omni nocte capiendus.

* 15. Take Oil of Turpentine, one drachm and a half.
Yolk of Egg, a sufficiency to mix them.
Then add
Compound Juniper Spirit, one ounce.
Decoction of Bark, five ounces.
Of this mixture, two table-spoonsful may be taken every fourth hour.

Or,

16. Take Ammoniated Tincture of Guaiac. two drachms.
Spirit of Cinnamon, half an ounce.
Decoction of Bark, one ounce.
Wine of Tartarized Antimony, twenty-four drops.
Mix them for a draught, to be taken twice or thrice a day.

Or,

17. Take Ammoniated Tincture of Guaiac. two drachms for a dose.
In any vehicle.

Or,

18. Take Gum Guaiac. one scruple.
Subcarbonate of Ammonia, ten grains.
Confection of Roses, a sufficiency to form a bolus, which may be given morning and evening.

Or,

19. Take Gum Guaiac. fifteen grains.
Antimonial Powder, two grains.
Opiate Confection, ten grains.
Syrup, a sufficiency to make them into a bolus.

Or,

20. Take Powdered Gum Guaiac. one scruple.
Compound Powder of Ipecacuanha, half a scruple.
Mix them for a dose, to be taken every night at bed-time.

tion of cinchona, often proves serviceable in very obstinate cases. Internal medicines, however, without the aid of the external means before noticed, will seldom or never effect a cure in severe and obstinate cases.

Hydrargyri submurias and other preparations of mercury have been given in this disease along with the decoctum sarsaparillæ compositum; but they seem best adapted for those cases where we suspect it to be connected with a syphilitic taint. In palliating symptoms, and allaying pain and irritation, small doses of the antimonial powder and opium combined with the submuriate of mercury, sometimes prove useful.

Some medicines of the narcotic class, as conium and aconitum, have also been administered in chronic rheumatism.

In chronic rheumatism it will be absolutely necessary to persevere for a considerable length of time in the use of whatever medicines we employ, otherwise but very little benefit can be derived from them.

If in the course of the disease the patient's rest should be much disturbed throughout the night by the severity of the pains, an anodyne draught may be ordered for him, to be taken at bedtime.*

Colchicum combined with opium is a good combination of medicine, and well calculated to afford relief, particularly in the chronic from of the disease.—See Gout.

Where the different combinations of guaiacum, opium, antimony, and mercury, have proved ineffectual, very speedy and good effects have been derived from a cautious exhibition of the arsenical solution, as noticed under the head of Intermittents. It may be given with an equal proportion of tinctura opii in doses of ten drops, repeated twice or thrice a day in any convenient vehicle, and probably a decoction of the cinchona bark may be as good as any we can employ. It seems, however, to be pretty generally admitted, that it is chiefly in the protracted chronic rheumatism, where the vital powers are much diminished, and the ends of the bones, periosteum, capsules, or ligaments of the joints are likewise partially affected, that the use of arsenic is likely to prove essentially serviceable or successful.† In such cases we can begin with the quantity before mentioned, and to increase the dose gradually, according to the effect produced on

† See Dr. Bardsley's Medical Reports.

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* 21. ℞ Liquor. Ammon. Acet. f. ℥iij.
Aq. Cinnam. ℥j.
Tinct. Opii, ♏ xxvi.
Vini Antimon. Tart. ♏ xvj.
Syrup. Papaveris, ℥ij. M.
ft. Haustus.

* 21 Take Solution of the Acetate of Ammonia, three drachms.
Cinnamon Water, one ounce.
Tincture of Opium, forty drops.
Wine of Tartarized Antimony, twenty-four drops.
Syrup of Poppies, two drachms.
Mix them for a draught.

the stomach and bowels. In some instances, a degree of erythema arises on different parts of the body in consequence of administering this remedy; and in others, a soreness of the mouth and ptyalism are excited. Costiveness generally ensues; and this we must obviate by some proper laxative taken from time to time. It may be sometimes necessary to intermit its use for a day or two, and then return to it again.

Arsenic will do little good in recent cases of rheumatism, and especially in young subjects: indeed it can rarely be persevered in where the patient is not much reduced in strength, owing to the greatness of its stimulating power; for which reason it succeeds best in old persons.

As a mean of relief in chronic rheumatism, particularly in protracted cases, the cinchona bark may be employed.

No change whatever will be necessary in the patient's ordinary mode of living in chronic rheumatism, unless it happens to be intermixed with the acute, and then the diet should be cooling, light, and nutritive. In chronic rheumatism, mustard and horseradish may be taken freely in their natural state. Weak wine-whey, or barley-water, with a small quantity of the supertartrate of potass dissolved in it, may be used for common drink. Those who are subject to either kind of rheumatism should wear flannel next to the skin.

Where there are any suspicions of the disease being connected with a syphilitic taint, a long continued course of mercurial alteratives (see Syphilis) must be entered upon.

Chronic rheumatism sometimes affects the lumbar region, with an acute pain shooting down into the os sacrum, so that the patient cannot stand upright without suffering great pain; neither can he enjoy ease when in bed. This affection is known by the name of lumbago. The disease sometimes fixes likewise in the hip-joint, and is then called sciatica. Both of these affections are to be treated nearly in the same manner as chronic rheumatism.—In sciatica and local pains of the hip and loins turpentine is often given with relief, as is likewise guaiacum combined with the essential oil of sassafras.

From a paper inserted in the sixth volume of the Memoirs of the Medical Society of London, by Dr. Wm. Falconer, it appears that the external application of the Bath waters has proved a most valuable and efficacious remedy in innumerable instances of ischias, or the diseases of the hip-joint. The following is the mode of proceeding which has been pursued:—

When the patient is tolerably strong, and the symptoms moderate, he is directed to bathe in a hot bath of about 105 degrees of heat. The usual time of continuing in the bath is from fifteen to twenty-five minutes, and it is generally repeated twice or thrice a week. After a few times bathing, the dry pump, as it is quaintly called, or pumping on the affected part without bathing, is advised; and this is tried on the affected part on those days when the

patient does not bathe. From fifty to two hundred strokes of the pump are usually given.

The first good effects of the application are to abate the stiffness and pain of the joint, and to afford a greater latitude and extent of motion, which are often perceived after using it three or four times. As the effects of the remedy proceed, the soreness and swelling diminish; the nocturnal pain, which is often very distressing, abates; the power of supporting the body on the lower limb on the affected side increases: the legs, whether shorter or longer, approach towards their proper dimensions; and the muscles, that were let down and wasted, regain their natural shape, firmness, and plumpness. Where a use of the waters seems to succeed thus favourably, there is no other remedy employed.

It sometimes happens, however, that the waters will show their beneficial effects to a considerable extent for a time, and then the amendment seems to be at a stand, but still without any accession of new morbid symptoms, or without any aggravation of the old. In such cases it is found requisite to suspend the use of the waters for a short period, and to apply a blister upon the seat of the pain; after the healing of which, the application of the waters may be repeated with advantage.

Where it happens that the irritability of the nerves is much excited by a use of the bath, or that it causes profuse perspiration, much caution is required. In instances of the latter kind, unaccompanied by fever, a light infusion of cinchona with aromatics is generally serviceable: but the tendency to fever is most to be apprehended. If the spot where the uneasiness is felt be extremely sore, and tender to the touch, and the swelling and pain are considerable, then it will be necessary to be on our guard. Cupping-glasses, with scarifications, are applied in such cases with advantage; or, if the skin be too sore or tender to endure without much pain the suction of a cupping-glass, a large number of leeches have been substituted in the place of the other, and by being repeatedly applied, have proved of great service. In aid of these applications, saline cooling purgatives, and the common febrifuge draught, with antimonials, are administered with advantage. For the relief of the pain, which often subsists without fever, it is found necessary to employ opiates; and a preference is given by Dr. Falconer to the pulvis ipecac. compos. in the quantity of from five grains to twenty, once or twice in the course of the day and night.

If these means prove effectual in procuring an abatement of the symptoms, the bath is cautiously tried, and especially the cross-bath, which is cooler than the other, and this for a short time only. If it can be borne without aggravating the symptoms, but rather with a soothing effect, it is directed to be repeated after an interval of three or four days, interposing the purgative before mentioned occasionally. When the bath can be borne with ease, the use of the pump in the bath is recommended, as the impetus

of the water thrown on the part affected is less than in the dry pump, by the steam being conducted to the part beneath the surface of the water of the bath.

By these means, together with the assistance of a blister on the part, the application of the waters is rendered safe, and often effectual, in cases, we are told, that seemed at first view not to allow their use. To reduce the swelling, and promote a re-absorption of the effused fluid, when that can be safely done, Dr. Falconer directs a trial to be made of the lime poultice, composed of one part of quicklime, fallen to powder in the air, and two parts of oatmeal, which being made into a poultice with hog's lard, and spread thick on a cloth, is to be applied temperately warm to the part. This poultice is to be repeated every night, but to be removed in the morning. It generally produces some degree of moisture or exudation under it, though without raising a blister: and this gradual local discharge is often an effectual though gradual method of reducing tumours both of the hip and of the knee.

Those who are subject to rheumatic complaints ought carefully to avoid all exposures to cold and wet, and they should go warmly clothed, and wear flannel next the skin.

ORDER III.

Of EXANTHEMATA, or ERUPTIVE FEVERS.

Most of the diseases of this order are contagious, and attack a person only once in his life: they begin with fever, and at a definite time numerous and small eruptions are perceived scattered over the skin. In the nosology of Dr. Cullen, erysipelas is placed among this order, and although considered by some as contagious, still as it often affects the same person repeatedly, and in some becomes constitutional, it cannot be so arranged with propriety. In this volume it is placed with erythema among the preceding order of phlegmasiæ.

VARIOLA, or SMALL-POX.

Small-pox is a disease of a very contagious nature, marked by a fever which is usually inflammatory, but now and then is of a typhoid nature, attended with vomiting, and upon pressure of the epigastrium, with pain; succeeded after a few days by an eruption of red pimples on different parts of the body, which in the course of time suppurate, and scab, which at length fall off, leaving frequently behind them little pits in the skin, and, in severe cases, scars.

With regard to the history* of the small-pox, it appears from the researches of eminent writers, that this disease, as also the measles, had prevailed in China and Hindostan from remote antiquity, yet had not extended to the more western nations until the middle of the sixth century. About this period these maladies reached the southern coasts of Arabia, by vessels trading with India, and broke out near Mecca, during the war of the elephant (as it has been termed,) in the year 569, immediately before the birth of Mahomet.

During the latter parts of the sixth, and whole of the seventh century, they were spread by the Arabians over the remaining countries of Asia, and all that part of Africa which is washed by the Mediterranean Sea. In the eighth century Europe was contaminated in consequence of the Saracens invading Spain, Sicily, Italy, and France, and the above diseases gradually extended to the north. They had reached Saxony, Switzerland, and England, in the ninth or tenth century. And lastly, in the beginning of the sixteenth century, twelve years after the death of Columbus, the infections were transported by the Spaniards to Hispaniola, and soon afterwards to Mexico, and diffused speedily over that hemisphere also.

The small-pox attacks people of all ages, but the young of both sexes are more liable to it than those who are much advanced in life; and it may prevail at all the seasons of the year, but in general is most prevalent in the spring and summer.

It rarely happens that any person is attacked a second time with the disease, however he may be afterwards exposed to its infection, or even be repeatedly inoculated with variolous matter. A few instances to the contrary have now and then occurred, however, and with a high degree of severity. Affirmations of this from the highest authorities are on record. Dr. Jenner was of opinion, I believe, that the susceptibility to receive variolous contagion always remains through life, but under various modifications or gradations, from that point where it passes silently through the constitution, up to that where it appears in a confluent state, and with such violence as to destroy life.

The small-pox is distinguished into the distinct and confluent; implying, that in the former the eruptions are perfectly separate from each other, and that in the latter they run much into one another. The distinct may often be distinguished from the confluent before the eruption appears, by the mildness of its attack, by the synochal type of the fever, the late appearance of the eruption, and the absence of typhoid symptoms.

Some anomalous varieties of small-pox occasionally occur in practice: viz. the crystalline, in which the fluid never becomes opaque or purulent; the vesicular, in which small vesicles appear

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* See Mr. Moore's History of the Small-Pox, p. 110.

in the interstices of the pustules; and some others; but which are all merely different modifications of the same disease.

Both the distinct and confluent small-pox are produced either by breathing air impregnated with the effluvia arising from the bodies of those who labour under the disease, or by the introduction of a small quantity of variolous matter into the habit by inoculation; and it is probable that the variety of the small-pox is not owing to any difference in the contagion, but depends on the state of the person to whom it is applied, or on certain circumstances concurring with the application of it.

Many physicians of eminence are of opinion, that the variolous contagion is limited to a narrow sphere, and that it seldom, if ever, is conveyed by the wind to a distance, as some have imagined it capable of being. Dr. Haygarth, in his Sketch of a Plan to exterminate the casual Small-pox from Great Britain, informs us, that certain facts appear to exhibit *negative* proofs that the open air is not contaminated to a great distance from the patient; not to one thousand five hundred feet, nor probably to one hundredth part of the space. He mentions, that very few cases have been adduced by those who have corresponded with him on the subject, in which clothes exposed to variolous miasma have been even suspected of conveying infection, and that several have given a negative testimony against this mode of communication. He further notices, that innumerable instances are to be produced where medical men, after exposing themselves to the miasms of an infectious chamber, in a very short time nearly approach persons liable to the distemper, who are yet not infected by the interview; and that inoculators are daily in this situation without communicating the casual small-pox. The period during which infection remains latent in the body, he observes, is determined by the testimony of many to be, in the inoculated small pox, from the fifth day to the sixteenth, seventeenth, and even the twenty-third: in the casual or natural small-pox, a little but not much longer than the common period in inoculation.

A variety of opinions have been entertained respecting the effect of the variolous infection on the fœtus in utero; a sufficient number of instances, however, have been recorded, to ascertain that the disease may be communicated from the mother to the child. In some cases the body of the child at its birth has been covered with pustules, and the nature of the disease has been most satisfactorily ascertained by inoculating with matter taken from these pustules. In other cases there has been no appearance of the disease at the time of the birth, but an eruption and other symptoms of the malady have appeared so early, as to ascertain that the infection must have been received previously to the removal of the child from the uterus. Moreover, some cases reported in the first volume of the Medico-Chirurgical Transactions of London,* by Dr. Jenner, point

* See page 271.

out the obvious infection of the fœtus before birth, and communicated through the mother, she being already secure from any visible occurrence of the disorder,—which is indeed a very extraordinary circumstance.

Four different states or stages are to be observed in the smallpox :—first, the febrile ; second, the eruptive ; third, the maturative ; and fourth, that of declination or scabbing, which is usually known by the name of secondary fever.

When the disease has arisen naturally, and is of the distinct kind, the eruption is commonly preceded by a redness in the eyes, soreness in the throat, pains in the head, back, and loins, weariness and faintness, alternate fits of chilliness and heat, thirst, nausea, inclination to vomit, and a quick pulse

In some instances these symptoms prevail in a high degree, and in others they are very moderate and trifling. In young children, startings and convulsions are apt to take place a short time previous to the appearance of the eruption, always giving great alarm to those not conversant with the frequency of the occurrence.

About the third or fourth day from the first seizure, the eruption shows itself in little red spots (similar to flea-bites) on the face, neck, and breast; and these continue to increase in number and size for three or four days longer ; at the end of which time they are to be observed dispersed over several parts of the body.

If the pustules are not very numerous, the febrile symptoms will generally go off on the appearance of the eruption, or they will become very moderate. It sometimes happens, that a number of little spots of an erysipelatous nature are interspersed among the pustules ; but these generally go in again as soon as the suppuration commences, which is usually about the fifth or sixth day; at which period a small vesicle, containing an almost colourless fluid, may be observed upon the top of each pimple.

Should the pustules be perfectly distinct and separate from each other, the suppuration will probably be completed about the eighth or ninth day, and they will then be filled with a thick yellow matter ; but should they run much into each other, it will not be completed till some days later.

When the pustules are very thick and numerous on the face, it is apt about this time to become much swelled, and the eyelids to be closed up ; previous to which, there usually arises a hoarseness and difficulty of swallowing, accompanied with a considerable discharge from the mouth of viscid saliva.

About the eleventh day the swelling of the face usually subsides, together with the affection of the fauces, and is succeeded by the same in the hands and feet ; after which the pustules break, and discharge their contents, and then becoming dry, they fall off in crusts, leaving the skin which they covered of a brown red colour, which appearance continues for many days. In those cases where the pustules are large, and are late in becoming dry and the scabs falling off, they are very apt to leave pits behind them ; but where they

are small, suppurate quickly, and are few in number, they neither leave any marks behind them, nor do they occasion much affection of the system.

In the confluent small-pox the fever which precedes the eruption is much more violent than in the distinct, being attended usually with great anxiety, heat, thirst, nausea, vomiting, and a frequent and contracted pulse, and often with coma or delirium. In infants, convulsive fits are apt to occur, which either prove fatal before any eruption appears, or they usher in a malignant species of the disease.

The eruption usually makes its appearance about the third day, being frequently preceded or attended with a rosy efflorescence, similar to what takes place in the measles: but the fever, although it suffers some slight remission on the coming out of the eruption, does not go off as in the distinct kind; on the contrary, it becomes increased after the fifth or sixth day, and continues considerable throughout the remainder of the disease.

As the eruption advances, the face, being thickly beset with pustules, becomes very much swelled, the eyelids are closed up, so as to deprive the patient of sight, and a gentle salivation ensues, which towards the eleventh day is so viscid, as to be spit up with very great difficulty. In children, a diarrhœa usually attends this stage of the disease instead of a salivation; which is to be met with only in adults.

The vesicles on the top of the pimples are to be perceived sooner in the confluent small-pox than in the distinct; but they never rise to an eminence, being usually flatted in; neither do they arrive to a proper suppuration, as the fluid contained in them, instead of becoming yellow, turns to a brown colour.

About the tenth or eleventh day the swelling of the face usually subsides, the hands and feet beginning then to puff up and swell; and about the same time the vesicles break, and pour out a liquor that forms into brown or black crusts, which upon falling off leave deep pits behind them that continue for life; and where the pustules have run much into each other, they disfigure and scar the face very considerably.

Sometimes it happens that a putrescency of the fluids takes place at an early period of the disease, and shows itself in livid spots interspersed among the pustules, and by a discharge of blood by urine, stool, and from various parts of the body.

In the confluent small-pox, the fever, which, perhaps, had suffered some slight remission from the time the eruption made its appearance to that of maturation, is often renewed with considerable violence at this last-mentioned period, which is what is called the secondary fever; and this is the most dangerous stage of the disease.

It has been observed, even among the vulgar, that the small-pox is apt to appear immediately before or after the prevalence of the measles. Another curious observation has been made relating to

the symptoms of these complaints, namely, that if, while a patient labours under the small-pox, he is seized with the measles, the course of the former is generally retarded till the eruption of the measles is finished.* The measles appear, for instance, on the second day of the eruption of small-pox; the progress of this ceases till the measles terminate by desquamation, and then it goes on in the usual way. Several cases are, however, recorded in the Medical and Physical Journal, as likewise in the third volume of the Medical Commentaries, in which a concurrence of the small-pox and measles took place without the progress of the former being retarded.

The only diagnosis that is necessary is between small-pox and chicken-pox. In the latter the pustules commonly go back without coming to proper suppuration. Their number, size, appearance, and course, differ very essentially. There is great reason to suppose, however, that the one disease is sometimes mistaken for the other, which may account for many of the supposed failures of the vaccine inoculation.

The distinction is sufficiently apparent between the chicken-pox and the small-pox when each of these diseases appears in its proper colours; but when the latter is peculiarly mild, and the former extraordinarily violent, which is sometimes the case, then all the discriminating marks are obscured.

The distinct small-pox is not attended with danger, except when the eruptive fever is very violent, or when it attacks pregnant women, or approaches nearly in its nature to that of the confluent; but this last is always accompanied with considerable risk, the degree of which is ever in proportion to the violence and permanence of the fever, the number of pustules on the face, and the disposition to putrescency which prevails.

When there is a great tendency this way, the disease usually proves fatal between the eighth and eleventh day; but in some cases death is protracted till the fourteenth or sixteenth. The confluent small-pox, although it may not prove immediately mortal, is very apt to induce various morbid affections.

Both kinds of small-pox leave behind them a predisposition to inflammatory complaints, particularly to ophthalmia and pneumonia; and they not unfrequently excite scrofula into action, which might otherwise have lain dormant in the system.

The regular swelling of the hands and feet, upon that of the face subsiding, and its continuance for the due time, may be regarded in a favourable light. Violent eruptive fever, delirium, stupor, severe vomiting, dyspnœa, sudden disappearance of the eruption, subsidence of the swelling of the face or extremities, suppression of saliva, or depression of the pustules, followed by much prostration of strength, pallor of the skin, great anxiety, syncope, or convulsions, are appearances which denote the greatest danger. The

* See Dr. Duncan's Medical Commentaries, vol. i.

disease in its progress assuming a malignant character and typhoid type, and the pustules becoming livid, or being interspersed with petechiæ, portend a fatal termination.

The dissections which have been made of confluent small-pox, have never discovered any pustules internally on the viscera. From them it also appears, that variolous pustules never attack the cavities of the body, except those to which the air has free access; as the nose, mouth, trachea, the larger branches of the bronchiæ, and the outermost part of the meatus auditorius. In cases of prolapsus ani, they likewise frequently attack that part of the gut which is exposed to the air. They have usually shown the same morbid appearances inwardly as are met with in typhus gravior, where the disease has been of a very malignant nature. Where the febrile symptoms have run high, and the head has been much affected with coma or delirium, the vessels of the brain appear, on removing the cranium and dura mater, more turgid, and filled with a darker-coloured blood than usual, and a greater quantity of serous fluid is found, particularly towards the base of the brain. Under similar circumstances the lungs have often a darker appearance, and their moisture is more copious than usual.

When a person who has never had the small-pox is attacked with febrile symptoms after having been exposed to infection, or in consequence of the disease prevailing epidemically, we ought immediately to advise a strict pursuance of the antiphlogistic plan, debarring him from animal food, impregnating his drink with cooling acids, keeping his body open with gentle laxatives, and above all, exposing him freely to cool air, as, beyond all doubt, there is not a more effectual remedy for moderating the febrile heat produced by this disease than the application of cool air; and the more urgent the symptoms, the more will the patient stand in need of it; for where the ventilation is free, it is inconceivable how refreshing it proves, and how suddenly it is capable of reducing the pulse, and of moderating all the symptoms. The proper treatment of the patient from the very first attack of the disease will have great influence on the form which it assumes: if he be kept in a warm room, be loaded with bedclothes, and get warm drink, the fever will be severe and the eruption copious; while by an opposite treatment the disease may be rendered mild from the beginning.

In the early stage of small-pox, and during the eruptive fever, when the symptoms run high, we may, in addition to exposing the patient freely to cool air, recommend washing the body partially or generally with cold water. As the quantity, as well, perhaps, as the quality of the pustules depends greatly on the violence and duration of the eruptive fever, and as by mitigating the one we render the other more favourable, it would seem really advisable, as soon as a person is seized with variolous fever, wherein the febrile symptoms are any way high, to have cold water thrown over the body every four or six hours; which plan

may be continued until the eruption is completed. The safety and utility of the remedy are recorded in the thirteenth number of the Edinburgh Medical Journal, and are confirmed by my own experience. When had recourse to on the attack of variolous fever, it usually mitigates the headach, pain in the back, and other febrile symptoms; a slow and gentle perspiration succeeds, and a mild eruption takes place. Where it is resorted to after the small-pox have made their appearance, and by their quantity and the duration of the fever a confluent pock is expected, the cold bath seems not only to moderate the febrile symptoms, but likewise to diminish the number of the pustules, and in doing so greatly to lessen the danger of the disease.

The temperature of the patient's chamber should always be such that he may experience no disagreeable degree of heat, but rather a sensation of cold; and except he complains of being chilly, we need not be afraid of carrying the cool regimen too far.

He should lie on a mattress covered with only a few bedclothes, a feather-bed being apt to occasion too great an accumulation of heat. If convenient, he should have an apartment to himself, as the heat of a crowded room would be sure to prove injurious; and his body-linen, as well as that of the bed, should be shifted frequently.

In many instances, little more will be requisite than to pursue the steps which have been advised; but sometimes the fever and general inflammation run so high (particularly in adults of a plethoric and robust habit) as to be accompanied with great heat and dryness of the skin, redness of the face and eyes, considerable difficulty of breathing, acute pain in the head, stupor, or delirium; in which case it may be necessary to take away a little blood; but in resorting to this operation, great prudence is necessary, for should a fever of a malignant nature or putrid tendency accompany the disease, bleeding might prove highly injurious. Indeed, it might perhaps be the best practice to recommend it only in those cases where the effects expected from it cannot be procured by other remedies; and even in these local blood-letting by scarification of the temples, and cupping-glasses, or the application of leeches, ought to be preferred. Where the eyes look red and fiery, or coma prevails, topical bleeding may prove a valuable remedy.

The same caution should be observed with respect to a use of purgatives. For the purpose of diminishing excitement in the distinct small-pox, they may prove serviceable if administered in moderation; but if the accompanying fever is of the typhoid kind instead of synocha, then these and other antiphlogistic remedies are by no means warrantable. To dislodge the contents of the intestinal tube in such cases where costiveness prevails, we should only employ the most gentle laxatives, such as the neutral salts, with the occasional use of emollient clysters.

On the coming on of the fever, the stomach in some cases is

much disordered, and a constant nausea, or frequent vomiting, is apt to arise: to obviate which it will be proper to give a gentle emetic, working it off with a few draughts of chamomile-tea.

It is no uncommon occurrence for convulsive fits to attack children some short time previous to the appearance of the eruption, which are apt to alarm those who are not conversant with the disease. In this instance little more will be requisite, in general, than to admit cool air freely to the child; but should they occur at a very early period of the disorder, and be repeated frequently with any violence, they then are attended with considerable danger, and ought to be removed, if possible, by giving opium in doses proportioned to the age of the child. About five drops of the tinctura opii will be sufficient for a child of a year old, about eight drops for one of two years old, and so on in a regular gradation.

Blisters are sometimes used in cases of this nature; but from the great length of time which elapses previous to their producing any effect, they seldom prove serviceable.

In those instances where the irruption does not come out kindly, it has been advised to immerse the whole body for a short time in a warm bath; but perhaps it may be more proper only to put the feet and legs into warm water at first, using at the same time a more generous diet; and should these means fail, the other mode of proceeding may then be adopted.

If there be great irritability and restlessness, opium in small quantities, either with the saline mixture, or a grain or two of antimonial powder, will be serviceable.

Where the febrile symptoms run high after the appearance of the eruption, we should give small and frequently repeated doses of antimonials, as advised under the head of Simple Continued Fever.

With the same view of lessening febrile heat and excitement, we may employ refrigerant medicines, such as nitre and saline draughts, administering the latter in the act of effervescence. Cold diluents, such as lemonade, imperial, &c., may be taken freely to allay thirst.

It will likewise be proper to avoid heat, and to expose the body to cool air. The cool regimen, in its fullest extent, is however by no means so necessary after the completion of the eruption, or where the fever has almost or wholly disappeared, as before. At the same time we must be careful to avoid the opposite and more dangerous extreme of relaxing too suddenly in the employment of the cool regimen. The use of laxative medicines, or clysters, as far as is necessary to prevent costiveness, is to be continued; and with regard to the application of cold, it should at this period be regulated by the patient's feelings.

If, on the other hand, the febrile symptoms continue considerable, notwithstanding the appearance of the eruption, the plan of treatment must not be relaxed. The continued use of gentle

cathartics and the cool regimen is then necessary; at an early period they are the best means of moderating the eruptive fever; they are now the most effectual for preventing the appearance of the secondary, which is always to be feared where the remission on the completion of the eruption is inconsiderable.

When a degree of cynanche is present, gargles and the inhalation of warm steam may be used.

In those cases where the pustules contain a thin watery fluid, and are accompanied with great soreness, uneasiness, loss of strength, and lowness of the pulse, the cinchona bark should be given in large doses, and be frequently repeated; and although it may perhaps increase the difficulty of breathing, and render the expectoration a little more difficult, still its good effects in obviating the symptoms of irritation, and the tendency to putrescency, will greatly overbalance the former. To assist the effects of this bark, a free use of wine-whey ought to be allowed.

In the confluent small-pox, particularly where there is a putrid tendency, where the pustules are filled with a bloody water, or where petechiæ are interspersed among them, we must also have recourse to the bark of cinchona joined with wine, together with acids, all kinds of which have been much employed in this form of the disease, but more particularly the muriatic and sulphuric, as noticed under the head of Typhus Gravior. Where hæmorrhages arise, we may give alum in addition to these remedies.

If the eruptions, after having made their appearance, strike in suddenly, or if the disease has arisen in a person of lax fibres, and is attended with a weak low pulse, and a sinking in of the pustules, then, besides allowing a liberal use of wine-whey, we should apply cataplasms to the soles of the feet, and blisters successively to different parts of the body, paying no regard to their being covered with pustules. Camphor, ammonia, musk, and aromatics, will likewise be advisable medicines. The warm bath will also be proper.

Where the suppuration in the pustules does not go on kindly, owing to the want of rest, it will be necessary to give opiates. About forty drops of the tinctura opii may be administered to an adult every night at bed-time, and one or two teaspoonsful of the syrupus papaveris somniferi to young children. If opiates are given when the excitement is considerable, or if they are found to induce coma, their use will certainly be improper; but in all other cases, more particularly during the maturating stage, in the confluent small-pox, a quantity of opium, sufficient to allay restlessness, provided care be taken, by administering gentle laxatives, to prevent its constipating effects, will be sure to prove beneficial.

The secretion from the glands of the mouth and throat in the confluent small-pox, usually goes on without the help of medicines until near the time of the completion of the suppuration; so that it is only necessary to defend the parts from the matter secreted, by

giving mucilaginous drinks, such as barley-water, linseed-tea, or a solution of gum. acaciæ; but towards the time of its being completed, the secretion is apt to become so thick and viscid, as to be expectorated with the greatest difficulty, and often even to endanger suffocation. In this case we should give an emetic,* after which the mouth and throat must be washed out frequently with some proper gargle, as below,† or as advised under the head of Inflammatory Quinsy. If the emetic does not afford a permanent relief, we may then apply a blister to the external fauces with some prospect of advantage.

When the swelling of the face begins to subside, if we should find that the extremities do not become puffy and swelled, as they ought to do, cataplasms and blisters may be applied to them, to excite inflammation.

Determination to the head or chest, or other viscera, requires blisters, pediluvium, and sinapisms to the feet.

If a strangury or suppression of urine should ensue in the course of the disease, as sometimes happens, it possibly may be relieved by making the patient walk barefooted several times across the floor, and by giving him small doses of nitre at the same time. Dashing cold water on the legs, as is sometimes practised to solicit the alvine discharge, may also be tried. Should these means fail in affording relief, we ought then to resort to the other remedies recommended under these particular heads.

Obstinate vomiting, which in this disease often proves a very troublesome as well as dangerous symptom, is most effectually allayed by saline medicines, taken in the act of effervescence, and joined with opium.‡

Profuse diarrhœa is a troublesome occurrence in the confluent small-pox, particularly in children: but unless this symptom produces a dangerous degree of debility, we should be cautious in checking it; and even when it does occasion considerable debility, the safest plan will be to endeavour to moderate it by very gentle astringents and tonics. There is perhaps no instance, except towards the termination of the disorder, in which the diarrhœa

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* 1. ℞ Antimon. Tartarizat. gr. jss.
Aq. Fontan. f. ℥j.
Oxymel. Scillæ, f. ℥ss. M.
ft. Haustus.

† 2. ℞ Infus. Rosæ Comp. f. ℥vij.
Mel Optim. f. ℥ss.
ft. Gargarisma. M.

‡ 3. ℞ Potassæ Aerati, ℈i.
Aq. Cinnam. f. ℥x.
Tinct. Opii, ♏ viij.
Syrup. Cort. Aurant. ℥j. M.
ft. Haustus, quarta quaque hora adhibendus in actu effervescentiæ cum cochleare magno succi limonis.

* 1. Take Tartarized Antimony, one grain and a half.
Pure Water, one ounce.
Oxymel of Squill, half an ounce.
Mix them for a draught.

† 2. Take Compound Infusion of Roses, seven ounces.
Honey, half an ounce.
Mix them for a gargle.

‡ 3. Take Aërated Potass, one scruple.
Cinnamon Water, ten drachms.
Tincture of Opium, twelve drops.
Syrup of Orange Peel, one drachm.
Mix them, and let this draught be given every fourth hour with a table-spoonful of lemon juice during the effervescence.

can be safely stopped by astringents, and then it is to be done cautiously; and when these medicines, either conjoined with opium, or of themselves, produce too sudden an effect, it must be counteracted by gentle laxatives.

In all cases where there is a propensity to sweating, after the eruptive fever has passed, a cool regimen will be particularly necessary.

In the distinct small-pox there ensues little or no secondary fever; but it regularly attends on the confluent, and is always in proportion to the number of pustules, proceeding probably from an absorption of the matter. This being the case, it may be advisable to open every pustule as soon as the suppuration in it is completed; and in order to moderate the fever, as well as to prevent hectic symptoms and after-suppurations from arising, we ought to employ mild cathartics, so as to keep the bowels regularly open.

If, at the approach of the secondary fever, the pulse is quick, hard, and strong, the heat very great, the head much affected, and the breathing laborious, a quantity of blood, proportioned to the urgency of the symptoms, may probably be taken with safety, by means of scarifications, or leeches applied to the part most affected; but a use of gentle cathartics, and other antiphlogistic means, seems much more advisable. If, on the contrary, the patient is faint, the pustules look pale and much indented, and the extremities feel cold, with other symptoms of irritation, the fever is then to be considered as of the typhoid kind; and the proper remedies to be employed are cinchona bark, in whatever form it is found to sit easiest on the stomach, conjoined with wine and aromatics, together with mineral acids, opium, and artificially prepared pure air, or oxygen gas.

To prevent the face from being marked after the confluent small-pox, it has been recommended to bathe it three or four times a day with warm milk and water, and on the seventh or eighth day to apply over its whole surface a mask made of fine cambric, thinly spread with a soft liniment, composed of olive oil, white wax, and prepared lard, or with the unguentum cetacei, so as to exclude the external air; which application is to be renewed twice or thrice a day.

When the pustules are numerous on the face, it sometimes happens that the eyes become much affected, and that a loss of sight is the consequence. In those cases, therefore, where the face is much beset with pustules, the use of mild and gently astringent collyria, as advised under the head of Ophthalmia, should never be neglected. To prevent the eyelids from adhering together in such cases, it may be necessary to bathe them from time to time with warm milk, and to besmear them frequently with a little emollient ointment of any kind.

The small-pox, particularly when it proves severe, is apt, in habits disposed to scrofula, to excite that disorder into action,

when it otherwise might not have shown itself. Frequent instances of this nature occur in practice, and prove obstinate to the practitioner, as well as distressing to the patient. In all such cases we must resort to the means advised under that particular head.

In the confluent small-pox, as well as the distinct, the patient's strength must be supported by food of a light nutritive nature, such as panado, bread-pudding, preparations of sago, arrow-root, roasted apples, &c.; and for common drink he may take thin gruel or barley-water gently acidulated, together with a little wine-whey now and then, when the febrile symptoms do not run high. If the accompanying fever is of a typhoid nature, a liberal use of wine will be proper.

Of INOCULATION.

Experience has taught us that by applying variolous matter to a scratch or wound, so as to occasion an absorption, we shall in general procure fewer pustules and a much milder disease than when the small-pox is taken in the natural way.

Notwithstanding these evident advantages, objections have been raised against inoculation, on the score that it exposes the person to some risk, when it is possible he might have passed through life without being attacked by the disease in question; but in reply it may be urged, that he will be exposed to much greater danger from the intercourse which he must have with his fellow-creatures, by taking the disorder in the natural way.

In objection to inoculation, instances have been adduced to support the probability of a person's being liable a second time to the small-pox, when produced at first by artificial means; but such instances are very rare indeed, and we may safely conclude, that in most of those cases the matter used was not variolous, but that of some other eruptive disorder, such as the chicken-pox; which, when severe, may be mistaken for the small-pox by those who are not very conversant with the difference between them.

It has been computed that a third of the adults die who take this disease in a natural way, and about one-seventh of the children; whereas of those who receive it by inoculation, and who are properly treated afterwards, the proportion probably is not greater than one in five or six hundred.

Although inoculation for the small-pox may have been beneficial to individuals by greatly lessening the chance of death, yet it may safely be asserted that it has proved of no benefit to the community at large, but the reverse; which is evident by the bills of mortality, as they clearly prove that the disease of small-pox has increased in England since the introduction of inoculation, in the proportion of 19 in every 100.

This has arisen in a great measure from the want of some laws of exclusion, analogous to those of quarantine, by which those who produce the disease by inoculation should be prohibited from exposing the inoculated persons in the way of such as are liable to the infection. A recent decision in the Court of King's Bench, however, has shown, that such an exposure, where it produces the disease in others, is a misdemeanour by common law, and that those who thus trespass on the community, and are guilty of the act, are liable to imprisonment.

The practice of inoculating is generally supposed to have been introduced into Britain from Turkey, by Lady Mary Wortley Montague, about the year 1721, whose son had been inoculated at Constantinople during her residence there, and whose infant daughter was the first that underwent the operation in this country. Some letters, however, of Dr. Williams, Mr. Owen, and Mr. Wright, which may be seen in the Philosophical Transactions for the year 1722, assert, that inoculation was well known in the south of Wales at that time, and had been of long standing. It seems likewise to have been practised in the Highlands of Scotland, before its introduction into England.

Mr. Mungo Park, in his travels into the interior of Africa, found that inoculation had long been practised by the negroes on the Guinea coast, and nearly in the same manner, and at the same time of life, as in Europe.

Where inoculation really originated is a matter of doubt, although it has been ascribed to the Circassians, who employed it as a mean for preserving the beauty of their women. It is more than probable that accident suggested the expedient among the different nations to whom the small-pox had long been known, independently of any intercourse they had with each other: and what greatly adds to the probability of this conjecture is, that in most places where inoculation can be traced back for a considerable length of time, it seems to have been practised chiefly by old women before it was adopted by regular practitioners.

Many physicians held the practice of inoculation in the greatest contempt at first, from its supposed origin; others again discredited the fact; while others, on the testimonies of its success in distant countries, believed in the advantages it afforded, but still did not think themselves warranted to recommend it to the families they attended; and it was not until after the experiment of it had been made on six criminals, (all of whom recovered from the disease and regained their liberty,) that it was practised in the year 1726 on the royal family, and afterwards adopted as a general thing

To insure success from inoculation, the following cautions should strictly be attended to:—

1st, That the person should be of a good habit of body, and

free from any disease, apparent or latent, in order that he may not have the distemper and a bad constitution, or perhaps another disorder, to struggle with at the same time.

2dly, To enjoin a temperate diet and proper regimen; and, where the body is plethoric, or gross, to make use of gentle purges, together with mercurial and antimonial medicines, as hereafter mentioned.

3dly, That the age of the person be as little advanced as possible; but not younger, if it can be avoided, than four months.

4thly, To choose a cool season of the year, and to avoid external heat, either by exposures to the sun, sitting by fires, or in warm chambers, or by going too warmly clothed, or being much in bed.

5thly, To take the matter from a young subject who has the small-pox in a favourable way, and who is otherwise healthy and free from disease; and when fresh matter can be procured, to give it the preference.

Where matter of a benign kind cannot be procured, and the patient is evidently in danger of the casual small-pox, we should not, however, hesitate a moment in recommending inoculation from any kind of matter that can be procured, as what has been taken in malignant kinds of small-pox has been found to produce a very mild disease. The mildness or malignity of the small-pox appears, therefore, to depend little, if at all, on the inoculating matter. Variolous matter, as well as the vaccine, by being kept for any length of time, particularly in a warm place, is apt, however, to undergo a decomposition by putrefaction, and then another kind of contagious material has been produced.

In inoculating, the operator is to make the slightest puncture or scratch imaginable in the arm of the person, rubbing that part of the lancet which is besmeared with the matter repeatedly over it, by way of ensuring the absorption; and in order to prevent its being wiped off, the shirt-sleeve ought not to be pulled down until the part is perfectly dry.

In preference to either puncturing the arm, or scratching it in a direct line, it has been recommended to introduce the lancet armed with the matter obliquely beneath the cuticle, so as to wound very slightly, and occasion little or no flow of blood. This mode may probably be preferable; but in withdrawing the point of the lancet, it will be right to press the wound with the finger, that the parts in contact with the matter may wipe it off the lancet, and thereby secure the success of the operation. When inoculation is performed in any of these ways, the application of a plaster or bandage will be unnecessary.

The matter of small-pox must be applied to a wound in order to induce the complaint. Dr. Rush informs us, he could not induce the small-pox by rubbing the matter on the entire skin; and he likewise mentions, that a negro girl took some variolous

matter mixed with a dose of physic, which produced no sensible effect.

A singular circumstance attending inoculation is, that when this fails in producing the effect, the inoculated part nevertheless sometimes inflames and suppurates, as in cases where the complaint is about to follow; and the matter produced in such cases is as fit for inoculation as that taken from a person actually labouring under the disease. The same happens very frequently in inoculation for the cow-pox.

If, on the fourth or fifth day after the operation, no redness or inflammation is apparent on the edges of the wound, we ought then to inoculate in the other arm in the same manner as before; or, for greater certainty, we may do it in both.

Some constitutions are incapable of having the disease in any form. Others do not receive the disease at one time, however freely exposed to its contagion, even though repeatedly inoculated, and yet receive it afterwards by merely approaching those labouring under it. Dr. Huxham* makes mention of cases of this nature. His words are: "I know an old nurse, and one apothecary, who for many years attended persons, and a great number too, in the small-pox, and yet never had them; nay, many that have industriously endeavoured to catch the infection, by frequenting the chambers of the sick, have done it without effect; and yet some of these persons, some months or years after, have been seized with the small-pox."

On the coming on of the febrile symptoms, which is generally on the seventh day in the inoculated small-pox, the patient is by no means to be suffered to take to his bed; but, on the contrary, must be constrained to keep up, and to be as much in the cool air as possible: and if thirsty, he may partake freely of some cooling antiseptic drink. As the number of pustules would probably be much increased by lying with another person, the patient should always have a bed to himself.

From the time that the matter is introduced into the system to the appearance of the eruptions, it will be necessary to observe a total abstinence from all animal food, and to give some gentle purgative every second or third day, if the person is of a gross habit; and on the intervening ones, he may take a dose of the following preparative powder:—Mix a drachm of prepared chalk with twelve grains of hydrargyri submurias, and one grain of tartarized antimony, which for an adult may be divided into three doses, and for a child of a year old, into twelve.

Some late experiments might induce us to believe that preparation has little or no effect on the future eruption, and that the cause of its mildness, in the inoculated small-pox, is to be ascribed to the operation itself, independent of any thing else. Mons. Desserts, in a sitting of the French National Institute, is said, how-

* See his Treatise on Fevers, Small-pox, &c.

ever, to have adduced a number of facts to prove that the natural small-pox is rendered much milder by the use of mercurial remedies, and probably the inoculated disease may likewise be influenced by them. Indeed, it appears from the experiments of Van Woensel, that the submuriate of mercury, given as an alterative for some days before inoculation, and till the eruptive fever commences, does with certainty render the disease mild. A singular circumstance, mentioned by the same author, is, that this preparation of mercury, triturated with variolous matter, incapacitates it from conveying the disease by inoculation.

The mode of treating the small-pox being the same, whether it arises naturally or from inoculation, a reference must be had to the plan which is laid down in the preceding pages; and as purging is not less necessary after the small-pox by inoculation than by the natural way, it ought by no means to be neglected.

Various plans have been proposed with a view wholly to banish the casual small-pox. Dr. Haygarth* has bestowed much attention on this subject; and were the regulations pointed out by him to be rigidly enforced, there is reason to believe they would be found sufficient for the purpose. A surer and more effectual way, however, to eradicate the disease, is by inoculating with vaccine matter every adult who never has had the small-pox; as likewise every child soon after its birth.

It has frequently been attempted to communicate the small-pox and measles to quadrupeds by inoculation, but in vain.

VARIOLÆ VACCINÆ, OR COW-POX.

In many of the dairy counties it had been long known that the cows are liable to an eruption on their paps or udders, which was occasionally communicated to the hands or arms of those who milked them, producing an ulcer, and some degree of fever; and it had been observed by the people of those counties, that those who had gone through this disease, known by the name of cow-pox, were not liable to the small-pox.

The disease had not, however, undergone any medical investigation, until the late Dr. Jenner, then of Berkley, in Gloucestershire, paid particular attention to it. He very satisfactorily ascertained that it was a much milder disease than the small-pox, and that the fact was true, that in general it secured those who had been infected with it from afterwards being liable to variolous infection. He also observed that the vaccine-pox is not infectious but by inoculation; and that on this account it might be inoculated in a family without endangering others: a circumstance of the greatest importance. On the suggestions of Dr. Jenner, many

* See his Sketch of a Plan to Exterminate the Casual Small-pox from Great Britain.

surgeons were induced to adopt the practice of substituting the one disease for the other, and its efficacy is in most cases now fully established.

With respect to the origin of the disease in the cow, we are informed by Dr. Jenner, that he traced it to the diseased heels of horses which had been affected with the grease; and by the person appointed to apply the dressings to them not paying a due attention to cleanliness, and incautiously bearing his part in milking the cows, with some particles of the infectious matter adhering to his fingers, he has communicated the disease to them. From numerous experiments made, however, at an early period, by the late Dr. Woodville, and by Mr. Coleman, Professor at the Veterinary College, with the matter of grease, taken in the various stages of that complaint, no such effect has been produced upon cows. Neither were inoculations with this matter, nor with several other morbid secretions in the horse, productive of any effects upon the human subject, which by no means accord with the facts adduced by Dr. Jenner on this point.

Some communications through the medium of the Medical and Physical Journal (see vol. iv. pages 381 and 466), in consequence of still later experiments, seem however to give support to Dr. Jenner's opinion as to the origin of the disease.

On its first investigation, some circumstances led to the supposition that the cow-pox and small-pox were originally one and the same disease; the latter being derived from the animal at some remote period, and having undergone, in the lapse of years, and by the influence of various constitutions, the changes we now experience. Subsequent facts have, however, invalidated this opinion.

From various experiments, it appears that the vaccine disease and the small-pox are not susceptible of intermixture, but that each preserves its distinct character under all circumstances. At the Small-pox Hospital it has been noticed, that when the vaccine and variolous fluids are mixed together, and thus inserted, sometimes the vaccine pustule, at others the variolous, has been produced, each of them retaining its characteristic marks throughout. Again, it has been found, that when the two fluids are inserted separately, and so near together that the two pustules which follow spread into one, by inoculating with the fluid taken from one side of it, the vaccine pustule alone will be produced, while the fluid taken from the other excites the genuine variolous pustule, with the general eruption of small-pox on the body. Another point of dissimilarity between the variolous and vaccine diseases, is this: the inoculation of the former we well know supersedes the natural disease many days after exposure to infection.

The effect produced by submitting persons to the influence of variolous and vaccine matter at the same time, is, that they both prove effective; for the vaccine vesicle proceeds to its acmè in the usual number of days, and the maturation of the variolous pus-

tules is attended with a pustular eruption on different parts of the body: but when variolous matter is not inserted until the ninth day after the inoculation with vaccine matter, the action of the variolous seems to be wholly precluded.

The variolous and vaccine fluids, inoculated about the same time, restrain the action of each other. The vaccine vesicle, in this case, is smaller, and proceeds more slowly to its maturity, and the variolous pustules are small, hard, and shining, producing only a small particle of matter at their apices.

The nipples of the cow being once affected, the disorder is communicated to the dairy-maids, and other assistants employed in milking, and by them it is spread through the farm, until at last most of the cattle experience its consequences.

The disease appears on the nipples of the cows in the form of irregular pustules, which on their first appearance are commonly of a colour somewhat approaching to livid, and are surrounded by an erysipelatous inflammation, according to the report of Dr. Jenner; but Dr. Woodville seems to think that it is rather an indurated tumefaction of the skin which surrounds the pustules, than an inflammation of an erysipelatous nature. Unless proper remedies are applied in time, these pustules soon degenerate into phagedenic ulcers, which prove extremely troublesome; the animals then become much indisposed, and the secretion of milk suffers a considerable diminution.

Inflamed spots now begin to appear on different parts of the hands and wrists of the domestics employed in milking, which run on quickly to suppuration, assuming at first the appearance of small vesications produced by a burn. Most commonly they come out about the joints of the fingers, and at their extremities; but whatever parts are affected, if the situation will admit, these superficial suppurations put on a circular form, with their edges more elevated than their centre, and of a colour distinctly approaching to blue. In consequence of absorption, tumours appear in each axilla, the system becomes affected, the pulse is quickened, and rigors, with general lassitude and pains about the limbs and loins, with a vomiting, come on. In some instances the head is much affected, and a delirium arises.

These symptoms, varying in their degrees of violence, usually continue for three or four days, leaving ulcerated sores about the hands, which from the sensibility of the parts are very troublesome, and commonly heal slowly, becoming not unfrequently phagedenic, like those from which they sprung.

The lips, nostrils, eyelids, and other parts of the body, are likewise affected sometimes with sores, in consequence of being heedlessly rubbed or scratched with the patient's infected fingers.

Dr. Jenner informs us, that he had never met with any case of the cow-pox, either taken naturally, or produced artificially, which proved fatal; but by Dr. Woodville we are told, that out of five hundred cases of inoculated cow-pox under his care, one proved

fatal, which was a child at the breast, on the eleventh day after the matter had been inserted in the arm.

From that occurrence, and a few cases in which the febrile symptoms ran high, this gentleman was at first very adverse to the vaccine inoculation; but from further trials he latterly gave it, with almost every other practitioner, a decided preference.

The few instances of death which have occurred from vaccine inoculation, since it has been more generally practised, may probably be referred with much justice to some unknown peculiarities of the constitution; to intervening disorders independent of the vaccine; and to inflammation excited by accidental causes in young children, especially when they have been ill fed and badly nursed—circumstances not uncommon among very poor people.

When the pustules are numerous, as sometimes happens where the disease has been received immediately from the cow, a considerable degree of fever attends; but when it has arisen from inoculation, few or no pustules are to be observed, except immediately round the wound in the arm; and little or no inconvenience is experienced.

A more general knowledge of the disease than what we had at first, has ascertained it to be an undoubted fact, that the vaccine virus is greatly modified, and rendered much milder, by passing through different habits; and that although the cow-pox has proved in many instances a severe disorder in those who received the infection immediately from the animal, still in a few instances only have the symptoms run high, or has the least inconvenience been experienced, where proper matter, taken from the human subject, was used for inoculation.

In the few cases which have been brought forward, where a numerous eruption, preceded by a fiery redness, took place, we should attribute it to something wrong in the habit of body: to the intervening of some other eruptive disease; or possibly to the having inoculated with matter which had undergone a decomposition, in consequence of putrefaction, or some other cause not obvious.

A use of medicine seems wholly unnecessary in the cow-pox, except in those cases of the natural disease where much febrile heat attends; and then the antiphlogistic plan ought to be pursued.

The vaccine virus is certainly of a very singular nature, inasmuch as that a person who has been infected by it, is generally found to be for ever after secure from the infection of the small-pox; neither exposure to variolous effluvia, nor the insertion of the matter into the skin, being capable of producing the disease. Many direct experiments, made by innumerable practitioners, prove that the susceptibility of the small-pox is in general totally destroyed by inoculating with the vaccine matter. The permanency of the effect was indeed a matter of some doubt, but that is now fully established. It appears from the Report of the Small-

Pox Hospital in London, that up to December, 1802, eleven thousand eight hundred patients and upwards have been vaccinated, of which number twenty-five hundred were afterwards *proved* to be secured from the natural small-pox, by receiving a further inoculation with small-pox matter, while they were, at the same time, exposed in an hospital full of its infection, without effect. It was said at first, that although the cow-pox destroyed the susceptibility of the small-pox, still it possessed not the same power with regard to itself, as a person might have the disease more than once. Instances certainly have been adduced of the cow-pox taking place a second time; but they are of very rare occurrence, and should be looked on as irregular. The same has happened with the small-pox.

In Dr. Jenner's first treatise he mentions that the small-pox is not always a security against the cow-pox, and that although the susceptibility of the virus of the cow-pox is for the most part lost in those who have had the small-pox, yet in some constitutions it is only partially destroyed, and in others it does not appear to be in the least diminished. A more intimate knowledge of the disease has convinced us of the fallacy of this opinion.

Soon after Dr. Jenner's first publication on the vaccine disease, a few instances were adduced, tending to invalidate his supposition of the preventive power of the cow-pox with regard to variolous infection; but these he considers to have been cases of a spurious disease, and therefore not affecting his general conclusion.

In using this term, he does not mean, however, to imply that there is a true and false cow-pox, but merely to express an irregularity or difference from that common form and progress of the vaccine pustule from which its efficacy is inferred. Those who perform vaccination ought, therefore, to be well instructed, and should have watched, with the greatest care, the regular process of the pustule, and learnt the most proper time for taking the matter.

A few cases of still later occurrence have also been brought forward by Mr. Goldson* of Portsmouth, and others, with the view of proving that the inoculated cow-pox is not a permanent security against the infection of the small-pox; but a failure in one or two cases out of more than thirty thousand, although ever so well substantiated, should be considered in no other light than as a casual irregularity, upon which no solid determination can or ought to be grounded. Instances of the like nature have been known to occur likewise among persons inoculated with variolous matter, and when they are met with, ought to be looked on as anomalous.

There can be little doubt, however, that some of the failures are to be imputed to the inexperience of the early vaccinators;

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* See his Cases of Small-pox subsequent to Vaccination.

and it is by no means unreasonable to expect, that further observation will yet suggest many improvements that will reduce the number of anomalous cases, and furnish the means of determining with greater precision when the vaccine disease has been effectually received.

Persons who have been vaccinated and passed through the cow pox with all the usual accompanying symptoms, and who have afterwards taken the small-pox, of which a very few instances may have happened, have generally imperfect pustules, which die away in a few days, without exciting any constitutional complaint; but the matter taken from these pustules will communicate the small-pox. This circumstance has been brought forward by the anti-vaccinists, as a proof that persons who have had the cow-pox may afterwards take the small-pox by inoculation and otherwise: not making the proper distinction between local and constitutional infection, or perhaps not understanding how any one can communicate a disease to others with which he is not himself infected.

We are informed by Dr. Jenner that the sources of a spurious cow-pox are as follows :—

1st, That arising from pustules on the nipples or udder of the cow, which pustules contain no specific virus.

2dly, From the matter (although originally possessing the specific virus) which has suffered a decomposition, either from putrefaction or from any other cause less obvious to the senses.

3dly, When the matter is taken from an ulcer in an advanced stage, which ulcer arose from a true cow-pox : and,

4thly, He supposes a spurious disease to arise from matter produced on the human skin, from contact with some peculiar morbid matter generated by a horse.

The characteristics of the true cow-pox are as follow : viz. a circumscribed, circular, elevated eruption, surrounded by a red halo or efflorescence ; smooth surface ; brown, black, or mahogany and tamarind-stone-coloured, long-adhering scab.

From a chemical analysis of vaccine matter by some French physicians, it was found to consist of water and albumen.

The succeeding arguments have been urged in favour of inoculation for the cow-pox over that for the small-pox.

1st, Of several thousand persons who have had the inoculated cow-pox, only one or two have died.

2dly, Very few well-attested instances have been produced out of many thousands of the above persons, known to have had the inoculated vaccine-pox and who were subsequently inoculated for the small-pox, of this disease being afterwards taken ; although many of these were also exposed to the infectious effluvia of the natural small-pox. And, traditionally, this fact has been established time immemorial with regard to the casual cow-pox.

3dly, It may be safely affirmed, that the inoculated cow-pox is generally a much slighter disease than the inoculated small-pox ;

and that the proportion of severe cases in the latter is to the former as at least ten to one.

4thly, It does not appear that the genuine vaccine-pox can be propagated, like the small-pox, by effluvia from persons laboring under it. Hence, if the vaccine inoculation should be universally instituted in place of the small-pox, it is reasonable to conclude, that this most loathsome and fatal malady will be extinguished.

5thly, It does not appear that the vaccine poison, like that of the small-pox, can be conveyed so as to produce the diseases indirectly from diseased persons, by adhering to clothes, furniture, bedding, letters, &c. Hence no danger of its propagation in these channels is to be apprehended from the universal practice of the inoculation of the cow-pox.

6thly, It has been found, that a person whose constitution has distinctly undergone the vaccine disease, is in future unsusceptible of the same disorder. Hence no objection can be made to the new inoculation, as was once urged, on account of its being believed, that by the commutation of the small-pox for the vaccine-pox, an eruptive disease would be introduced, to which the same person would be repeatedly liable.

7thly, It does not appear that those who have already gone through the small-pox are susceptible of the vaccine disease, as was at first believed. Hence no objection can be urged on the score of persons who have already gone through the small-pox, being liable to a new infectious disease, by the introduction of the vaccine inoculation.

8thly, Experience shows, that there is no reason to apprehend the smallest chance of deformities of the skin from the vaccine inoculation.

9thly, The extensive practice of the vaccine inoculation, and the accounts of the disease in the casual way, do not show that any other disease will be excited subsequently which is peculiarly imputable to the new practice.

On a review of these arguments, founded on facts, there can remain no doubt that the vaccine inoculation will soon wholly supersede and do away the variolous. Could all parents be persuaded to inoculate their children with the vaccine matter soon after birth, the small-pox might be entirely eradicated in time. The introduction of this species of inoculation generally throughout both the army and navy, and its extension to France, Spain, Germany, Russia, and every part of the Continent, as well as to both the Indies, fully stamp its value and efficacy, and give us reason to hope that it will shortly be adopted by every nation of the earth with whom we have the least communication. Vaccination has, indeed, penetrated to the remotest corners of the globe; and wherever it has been introduced, the increasing experience of every year has only served to confirm pretty generally a confidence in its efficacy. It has been recommended and adopted

by far the greatest and most respectable part of the profession, every where; but by a few individuals it has been obstinately opposed through interested motives.

In inoculating for the vaccine disease, we should carefully attend to the following circumstances:

1st, That the matter should not be taken later than the ninth day of the disease.

2dly, That the fluid should be perfectly transparent, as it is not to be depended upon if it has become in any degree opaque.

3dly, That the matter, if not used immediately, should be allowed to dry gradually and thoroughly before it is laid by for future use.

4thly, That the punctures can scarely be made too superficial, and on no account should more than one be made in each arm.

5thly, That attention should be paid to repress, as soon as may be, any excess of inflammation that may happen to arise; and this is best done by cold and restringent applications.

With respect to the operation of vaccination, it will be important to ascertain that the vesicle has not acted locally, but effected the desired change on the constitution; hence has originated the practice of testing by re-vaccinating during every period of the progress of the vaccine vesicle.

From the Report of the physicians of the Vaccine-Pox Institution, it appears that the matter of a single pustule, being mixed with one quarter of an ounce measure of warm water, such diluted matter excited as distinct a vaccine-pox by inoculation as an equal quantity of undiluted matter. A pox so excited was not attended with less inflammation or constitutional affection, than that excited by a large quantity of undiluted matter; which points out an easy method of inoculating several persons from a single vaccine-pock —a great conveniency indeed, when the poor to be inoculated at one time are very numerous.

VARICELLA, OR CHICKEN-POX.

This disease, like the small-pox, seems to depend upon a specific contagion, and affects a person but once during life.

The eruption is sometimes preceded by chilliness, succeeded by flushings and heat, pains in the head and back, thirst, restlessness, and a quick pulse; but at other times no such symptoms are perceptible. About the second or third day the pustules become filled with a watery fluid, which is never converted into yellow matter, as in the small-pox (to the milder species of which it seems, however, to bear some affinity); and about the fifth day they usually dry away, and are formed into crusts or scabs.

No danger ever attends the chicken-pox.

The small-pox and chicken-pox differ, in the eruption of the

former being preceded by a fever of a certain duration, while that of the latter is either preceded by none, or one of uncertain continuance; in the vesicles appearing much earlier in the chicken-pox than in the small-pox, and about the second or third day being filled with serum; in the matter of the former never acquiring the purulent appearance, which it always does in the distinct small-pox; and in the crusts which cover the pustules being formed about the fifth day, at which time those of the small-pox are not at the height of their suppuration.

These distinguishing marks it will be necessary to attend to, as there is great reason to suppose the chicken-pox has not only been sometimes mistaken for small-pox, but that its matter has been used for that of small-pox in inoculation, to which may be ascribed many of the supposed cases of small-pox having appeared a second time in the same person.

In general it is only necessary to make use of a spare regimen on the first appearance of the eruption, and to give one or two cooling purgatives afterwards; but should the febrile symptoms run high, it may then be advisable to make the patient take frequent small doses of some antimonial, with saline draughts and nitre, as advised under the head of Simple Fever, or the distinct Small-pox; drinking plentifully at the same time of cold diluting liquors, and keeping the body open with gentle laxatives or emollient clysters. The like treatment will also be proper in the swine-pox, which is indeed only a species of the varicella.

RUBEOLA, OR MEASLES.

THIS disease is an inflammatory infectious fever, attended by a cough, sneezing, defluxion of thin humours from the eyes and nose, and a determination of acrid matter to the surface of the body, showing itself in red spots over every part of it, but which never come to any suppuration, as in the former disorders, but go away in a small mealy desquamation of the cuticle after a few days' continuance.

In symptoms of nosology several varieties of the measles are mentioned, but they may all be comprehended under two heads; the benign and malignant: but the former attended with more or less of the symptoms of general inflammation, the latter accompanied by a putrid diathesis and typhoid fever.

The scientific Willan* divides rubeola into three species, viz., rubeola vulgaris, rubeola sine catarrho, and rubeola nigra; in the latter of which the papulæ suddenly assume a black or dark purple colour.

Scarlatina sometimes resembles the measles so exactly as not to be easily distinguishable; though this is a matter of great im-

* See his Description and Treatment of Cutaneous Diseases.

portance, because the method of cure in the two diseases is extremely different. The redness of the scarlet fever is more equally diffused than in the measles, and is not in distinct spots with the natural colour of the skin interposed; yet in a few cases it has been observed so. In the measles the eruption rises more above the skin, and occasions a manifest roughness to the touch, which is hardly observable in the scarlet fever, except a very little roughness sometimes in the arms. In the scarlet fever there is seldom a severe cough; the eyes do not water much, and the eyelids are not red and swollen; all which rarely fail to attend the measles. The time of the eruption is likewise different, for it appears in the scarlet fever both in the face and arms on the second day; but in the measles it begins only about the third day to be visible on the chin and breast, and does not come to the arms and hands till the fourth or fifth day.

The measles may prevail at all seasons of the year as an epidemic, but the middle of winter is the time they are usually most prevalent; and they attack persons of all ages, but children are most liable to them. They prove rather unfavourable to such as are of a plethoric or scrofulous habit. Like the small-pox, when genuine, they rarely affect persons but once, their contagion appearing to be of a specific nature. A recurrence of the measles has been disputed by some, but a number of examples are recorded by different writers where the measles took place twice.*

From a number of cases lately observed at New York, when the measles were very prevalent there, it appears that spurious forms of the disease, insufficient to protect the system from subsequent attacks, occur in a manner very analogous to the spurious appearances of the small-pox and of the variolæ vaccinæ.† For many persons, who on former occasions of the measles prevailing, and after exposure to their contagion, had exhibited certain irregular appearances of febrile, catarrhal, and eruptive symptoms, mistaken for the true disease, were afterwards attacked with measles in an exquisitely genuine form. The fact is likewise noticed by Dr. Willan,‡ and he mentions that the rubeola sine catarrho appears to be an unusually mild form of the disorder, which does not destroy the susceptibility to an attack in future. Two instances of its recurrence happened among his own children, at an interval of two years. In a later publication‖ he informs us, that he has since seen other cases of the same kind, wherein the efflorescence without fever or catarrhal symptoms having declined, there appeared, on the fourth day from its commencement, a new efflorescence, and violent disorder of the constitution.

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* See Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. iii.

† See the New York Medical Repository, vol. v. No. 3.

‡ See his Reports on the Diseases of London, 1799, p. 207.

‖ See his Description and Treatment of Cutaneous Diseases, Order III. Part I.

The eruption of benign measles is usually preceded by a chilliness and shivering, succeeded by heat, thirst, anxiety, pains in the head, back, and loins, heaviness and redness of the face and eyes, with an effusion of tears, swelling of the eyelids, nausea, and probably a vomiting of bilious matter; and with these symptoms there are a dry cough, hoarseness, hurried respiration, difficulty of breathing, frequent sneezing, and a discharge of acrid water from the nostrils. The pulse is at the same time frequent and strong.

In alarming cases, spasms of the limbs, subsultus tendinum, delirium, or coma, supervene. This last symptom, however, so frequently attends the eruptive fever of measles, that by some practitioners it is regarded as one of its diagnostics.

In measles, as in other febrile diseases, the symptoms generally suffer some remission towards the morning, returning however in the evening with increased severity.

About the third or fourth day small red spots, somewhat similar to flea-bites, appear in clusters about the face, neck, and breast, and in a day or two more the whole body is covered with them. They do not rise into visible pimples, but by the touch are perceived to be a little prominent.

The febrile symptoms do not however abate on the appearance of the eruption, as happens in the small-pox; but, on the contrary, are usually much increased, and they do not cease till after the desquamation takes place. The cough, hoarseness, difficulty of breathing, and defluxion from the eyes and nostrils, seem likewise greatly aggravated.

On the fifth or sixth day the spots from a vivid red are changed to a brownish hue, and they begin to dry away about the face, never having proceeded to any kind of suppuration; about the eighth or ninth day they disappear on the breast, and other parts of the body, with a mealy desquamation of the cuticle. About this period it is no uncommon occurrence for a diarrhœa to ensue.

The malignant form of the disease is accompanied with typhus fever, and with petechiæ and other signs of putrescency, as enumerated under that head. Moreover, the eruption appears more early, and all the concomitant symptoms are in an aggravated form. The fauces not unfrequently assume the same appearance as in cynanche maligna, probably from a combination of the two diseases. Some cases of this nature have lately fallen under my care, two of which proved fatal.

The febrile and other symptoms being mild, a gentle diarrhœa, a free and copious expectoration, a moisture on the skin at the appearance of the eruption, and an early and free desquamation, denote a favourable termination of the disease; but a high degree of fever, hot and parched skin, hurried and difficult breathing, flushed countenance, unusually hard pulse, the energy of the system not proving sufficient to throw out the eruption to the surface of the body, and the mucous membrane of the larynx, trachea, and bronchial ramifications being invaded therewith, as happens some-

times in scarlatina, ulcerated fauces, severe diarrhœa, the vomiting continuing after the eruption, great pain in the head and eyes after it, considerable degree of coma or delirium, the eruption becoming of a livid hue, with great prostration of strength, small intermittent pulse, petechiæ, and other marks of putrescency, point out the highest degree of danger. The existence of typhoid symptoms, along with a severe pneumonic affection, always increases the danger.

The consequences attendant on the measles are frequently more to be dreaded than the immediate disease; for although a person may get through it, and appear for a time to be recovered, still pulmonary consumption and hectic fever shall afterwards arise and destroy him, or an obstinate ophthalmia will ensue.

Measles, as well as the small-pox, not unfrequently call into action a disposition to scrofula, where such happens to exist in the habit.

Another bad consequence of the measles is, that the bowels are often left by them in a very weak state; a chronic diarrhœa remaining, which has sometimes proved fatal. Dropsy has also been known as a consequence of measles.

A singular circumstance attending the contagion of the measles is, that if it be taken a sufficient time before inoculation for the small-pox, so that the eruption may commence before the variolous fever comes on, it stops the progress of the small-pox in the inoculated wound, and delays it till the fever of the measles has finished its career.

The morbid appearances to be observed on dissection of those who die of the measles, are pretty much confined to the lungs and intestines: the former of which always show strong marks of inflammation, with sometimes a tendency to sphacelus.

Where the patient dies under the eruption, the trachea and larger branches of the bronchiæ, as in the small-pox, are often found covered with it, which may account for the increase of the cough after the appearance of the eruption.

In some instances the measles make their attack in a mild manner, and go through their natural course without medical aid; but in others the febrile symptoms run high, particularly after the appearance of the eruption, and are accompanied with a strong pulse, much coughing, great difficulty of breathing, and other symptoms of pneumonic inflammation; in which cases it will be proper to draw off a quantity of blood proportioned to the age and habit of the patient. We should, however, be careful never to draw blood unnecessarily, nor to take a greater quantity away than what may really be requisite. Topical bleeding by means of leeches to the chest or head, when symptoms of local inflammation in either of these are apparent, may be more advisable than venesection. So long as a considerable difficulty of breathing, a troublesome cough, or any other symptom indicative of inflammatory action in the lungs exists, the topical abstraction of blood

from the chest by means of leeches, or the scarificator with cupping-glasses, may be repeated from time to time. In those instances where the pulse is weak, and from the nature of the epidemic we may have strong reasons to apprehend an accompanying fever of the typhoid kind, or a disposition to putrescency, venesection ought not to be adopted.

During the whole course of the disease it will be highly proper to keep the body open; and therefore, if costiveness prevails, it should be obviated by giving cooling laxatives, such as the neutral salts and emollient clysters. Should the difficulty of breathing and oppression at the chest not be relieved by the bleeding and other antiphlogistic means, a blister may then be applied in the neighbourhood of the part or between the shoulders. In removing local inflammation, the application of a blister often proves a valuable remedy.

Where inflammation attacks the chest, a warm bath strongly impregnated with salt has been found a powerful subsidiary remedy in addition to bloodletting.*

The cough being usually very troublesome, it will be necessary to make frequent use of some demulcent pectoral, either of an oily or mucilaginous nature, as advised under the heads of Catarrh, Pleurisy, and Peripneumony, which will sheathe the throat, and obviate that rawness and soreness of it, which are generally much felt. Besides using pectoral medicines, the patient may drink freely of barley-water, linseed-tea, or the decoctum hordei compositum, gently acidulated with lemon-juice. If the patient is oppressed with a tenacious phlegm threatening suffocation, the best way of dislodging it is to give an emetic.

Where the cough proves very troublesome, and is attended with great difficulty of breathing, or soreness at the chest, inhaling the steam arising from warm water and vinegar may prove serviceable. A pediluvium might be a good auxiliary.

If the febrile symptoms run high, and great heat, thirst, and restlessness prevail, small nauseating doses of antimonials may be given every two or three hours, as advised under the head of Simple Continued Fever, in order to determine to the surface of the body.

In this as well as in other cases of excitement, it will be advisable to have recourse to nitre and saline draughts, along with antimonials, whenever the inflammatory symptoms run high.

When the cough harasses the patient much by night, so as to deprive him of rest, it may be necessary to give him an opiate about bed-time. The tinctura opii may be used for adults, combined with some diaphoretic;† but for children it will be better

* See Dr. Armstrong on Scarlet Fever, &c.

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† 1. ℞ Liquor. Ammon. Acetat. f. ℥ss.
Aquæ Puræ, f. ℥ j.

† 1. Take Solution of Acetate of Ammonia, half an ounce.
Pure Water, one ounce.

to substitute the syrupus papaveris. Opiates are, however, to be administered with great caution in this disease, as well as in all other inflammatory ones, and ought never to be employed where there is much fever present, with great difficulty of breathing. When these symptoms have been removed by timely bleeding, aperient medicines, &c., and the cough and watchfulness are those only which are urgent, opiates will prove both safe and efficacious.

In formidable cases of measles, when the urgency of the cough, the quick, difficult, anxious, or laborious respiration, with a high fever denote a dangerous disease, but in which bloodletting, or the exhibition of opium, may be thought equivocal, we may recommend full doses of the tinctura digitalis.* In such cases the fever is allayed, respiration relieved, and the bowels relaxed by its means: whereas the very reverse is frequently the consequence of opium. Hence its superiority in many instances.

If a severe purging should arise, we may moderate it by giving astringents joined with opium (see Diarrhœa); but as an open state of the bowels proves serviceable, it ought not to be suppressed, unless it is violent.

When the eruption of measles disappears before the proper period, and great anxiety, and delirium, or convulsions, take place, the indication will be to restore the eruption to the skin. To effect this, immediate recourse must be had to the warm bath, blisters to the chest and legs, and the administration of wine properly diluted with warm water; ammonia, camphor, æther, and antimonials, will be the best medicines.†

Spirit. Æther. Nitrici, ℥ xxv.

Vini Antimon. Tart. ℥ xv.

Tinct. Opii, ℥ xxvj.
Syrup. Tolutan. ʒij. M.
ft. Haustus.

* 2. ℞ Misturæ Camphoræ, f. ʒx.
Spirit. Æther. Nitrici, f. ʒj.

Tinct. Digitalis, ℥ xiv.

Syrup. Papaveris, f. ʒij. M.
ft. Haustus.

† 3. ℞ Pulv. Antimon. gr. ij.
Camphoræ, gr. iij.
Ammoniæ Subcarbonat. gr. iv.

Confect. Cort. Aurant. q. s. M.
ft. Bolus, quartis vel sextis horis adhibendus.

Vel,

4. ℞ Liquor. Ammoniæ Acet. f. ʒj.

Misturæ Camphoræ, f. ʒv.
Spirit. Æther. Sulph. C. f. ʒij.

Spirit of Nitric Æther, forty drops.
Wine of Tartarized Antimony twenty-two drops.
Tincture of Opium, forty drops.
Syrup of Tolu, two drachms.
Mix them for a draught.

* 2. Take Camphor Mixture, 10 drachms.
Spirit of Nitric Æther, one drachm.
Tincture of Foxglove, twenty-two drops.
Syrup of Poppies, two drachms.
Mix them for a draught.

† 3. Take Antimonial Powder, two grains.
Camphor, three grains.
Subcarbonate of Ammonia, four grains.
Confection of Orange Peel a sufficiency to form a bolus, which is to be given every four or six hours.

Or,

4. Take Solution of Acetate of Ammonia, one ounce.
Camphor Mixture, five ounces.
Compound Spirit of Sulphuric Æther, two drachms.

Should the symptoms manifest a malignant kind of the disease, and a putrid tendency prevail, we must then adopt a very different mode of treatment from what has been advised for the inflammatory. The cure must be conducted on the general antiseptic plan by cinchona, wine, acids (particularly the mineral,) and pure air, &c.—See Typhus Gravior.

Throughout the whole course of the measles the patient ought to be confined to his bed, and to avoid any exposure to cold air, which might repel the eruption; but in observing this precaution, he is not to run into the opposite extreme, and excite increased heat, either by loading himself with bed-clothes, or by not allowing a sufficient ventilation through his chamber. The degree of temperature should be regulated by the patient's feelings. Rubeola does not either require or bear the free application of cold, which is so potent a remedy for the most distressing symptoms of scarlatina; but nevertheless the propriety of coolness in the apartment and bed, as also in the drink of the patient, must be obvious.

A diluent and antiphlogistic diet being one of the best means of obviating inflammatory complaints, we ought to recommend it in the early stages of measles: but in managing it properly, we should recollect its tendency to produce debility, and in weak habits be careful not to push it too far. Where the disease shows a malignant and putrid tendency, a diet of this nature would be highly improper. In such cases a quantity of wine, proportioned to the age of the patient, the urgency of the symptoms, and the effect it produces, ought to be allowed, in addition to the bark of cinchona, mineral acids, and opiates.

After the disappearance of the eruption, it will be proper to give one or two doses of some cooling purgative. This practice, although disregarded by many, seems nevertheless worthy of attention, as ophthalmia and other troublesome complaints may probably be prevented by conforming to it.

If a difficulty in breathing, pain in the side, and cough, should ensue in consequence of the measles, it will be advisable to take away a proper quantity of blood, in order to remove the inflammatory state of the system which has been induced by the disease; besides which, the patient must pursue the other steps advised under the head of Incipient Phthisis Pulmonalis, making use of a milk and vegetable diet, breathing as pure an air as possible, and taking daily horse exercise; but he should carefully avoid cold.

As a weeping from the eyes and slight ophthalmia are apt to ensue after the measles, it may be right to wash them occasionally with a little rose-water, in which a few grains of the sulphate of

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Vini Antimon. Tartarizat. ℥ xx M. ft. Mistura cujas sumantur cochlearia duo magna secunda vel tertia quaque hora.	Wine of Tartarized Antimony, thirty drops: shake them. Of this mixture take two table-spoonsful every second or third hour.

zinc have been dissolved, and to avoid exposure to any glaring light.

Having gone through the treatment of measles, it only remains to be observed, that the disease may be propagated by inoculation, as well as the small-pox. Dr. Home, of Edinburgh, appears to have been the first who actually made the experiment, and from not being able to collect either matter, or a sufficient quantity of broken cuticle at the time of desquamation to produce the disease, he drew blood from the most superficial cutaneous vein, where the eruption was thickest. This received on cotton, he applied to a wound made on each arm of the person to be inoculated.

We are informed by him, that he inoculated twelve persons in this way, in all of whom the operation succeeded equal to his hopes. The eruptive fever generally commenced six days after inoculation, and the symptoms of the complaint where milder than they generally are in the casual measles. The fever was less severe, the cough either milder or wholly absent; the inflammation of the eyes was trifling; they watered, however, as much; and the sneezing was as frequent as in the casual measles; nor did bad consequences follow any case of inoculated measles. No affection of the breast remained after it.

The chief difference between the casual and inoculated measles seemed to be the absence of any pulmonic affection at all periods of the latter.

It appears that Dr. Home tried another experiment. He put a piece of cotton, which had remained in the nose of a patient under the measles, into that of a healthy child, making him breathe through the infected cotton; but the experiment, although repeated, did not succeed in inducing the disease.

Notwithstanding Dr. Home's success, still inoculation for the measles is seldom or never practised. The few who have been induced to attempt it, have not, I believe, made quite so favourable a report of it; on the contrary, it has been said to have produced an aggravated disease.

When the measles prevail epidemically, it may be advisable to confine such children as have never had them to a vegetable diet, giving a gentle aperient once or twice a week. Children thus prepared may be likely to have a mild disease.

SCARLATINA, OR SCARLET FEVER.

THE characteristics of scarlatina are as follow:—The fever is the contagious synocha. About the fourth day of the disease the face is a little swelled; a florid redness in large spots, afterwards coalescing, spreads partially over the skin, and in three days more or so goes off in furfuraceous scales, often succeeded by anasarca. The disease takes its name from the colour of the patient's skin.

It is divided into three kinds: when unaccompanied with an

ulceration of the throat, it is named scarlatina mitis, or simplex: when attended with such an affection, it is called scarlatina anginosa; and when accompanied by symptoms of malignancy and putrescency, the term scarlatina maligna is applied to it. The two latter are, however, very frequently blended together.

It has been disputed, whether the scarlet fever and malignant sore throat ought to be esteemed different diseases, or only varieties of the same disease. In my opinion they are the same *in specie*, which is confirmed by our finding that they are both epidemical at the same time: even in the same family, where a number of children have been ill, either together, or immediately after one another, some have had the distinguishing symptoms of scarlet fever, and others of the malignant sore throat. Indeed it is now pretty generally admitted, that scarlatina, in all its forms, as well as the cynanche maligna, is produced by the same specific contagion.*

There prevails much doubt amongst practitioners respecting the recurrence of scarlatina, some affirming that they have seen the disease recur in so manifest and unequivocal a form, as to leave no doubt in their minds as to its possibility, whilst others deny its ever affecting the same person a second time. Amongst the great number of persons who have been infected, few may be admitted, I think, to have gone through it a second time: but persons who have once been attacked with it, are less susceptible than those who never have had it.

Scarlatina attacks persons of all ages, but children and young people are most subject to it, and it appears at all seasons of the year; yet it is more frequently met with towards the end of autumn, or beginning of winter, than at other periods, at which time it often becomes a prevalent epidemic.

Sudden changes from heat to cold, rainy weather, and indigestion, may predispose the body to be acted upon more readily by the infection.

As an epidemic, scarlatina does not always assume precisely the same appearance. This diversity depends probably, in part, upon the varying nature and constitution of scarlatina itself, independently of all extrinsic circumstances; in part, upon certain contingencies, which are common to all the inhabitants of a whole district of country: such as the season of the year, the temperature of the air, the mildness or inclemency of the weather, together with other unknown qualities of the atmosphere; and partly upon circumstances which apply to individuals subjected to the disease, their general habit of body and constitution, their particular state of health at the time of the attack, and their situation with respect to lodging, ventilation, and cleanliness.

We have, I think, just grounds for presuming that the different species of scarlatina, such as the simplex, anginosa, and maligna,

* See Dr. Willan on Cutaneous Diseases, Order iii.

all proceed from the same source, because, under the same roof, in large families, some individuals have the disease in one form, some in another, and about the same period. The difference may arise from constitutional circumstances, and not from any difference of the contagion. Scarlatina is of a very contagious nature. Simple contact, inoculation, and inhalation, are the different ways by which the infection, not only of scarlet fever, but of other contagious disorders, may be introduced into the human body. It is the opinion, however, of Dr. Blackburne,* that the chief and only avenues to infection, in common, are the mouth and nostrils; and, consequently, that to guard against its communication through these channels, is the principal, or only necessary precaution. He thinks that the introduction of infectious particles into the human body by simple contact is impossible; and to support this, he brings forward the testimony of the late philanthropic Mr. Howard, who made no scruple of going into the open air to the windward of a person ill of the plague, and feeling his pulse; as likewise that of Dr. Russell, who personally attended the sick in the plague, and felt the pulses of a great number. That infection by the simple contact of poisonous matter on the skin is far less ready to excite disease than when applied, in the subtile state of vapour, to the more irritable surface of the nostrils and bronchiæ, is indisputable; but that it proves universally innocuous under every state and condition of the body, may be doubted.

The disorders to which scarlatina bears the greatest resemblance are the measles and cynanche maligna; but from the former it may be distinguished by attending to the following characteristic marks, in addition to those noticed under the head of Rubeola.

The efflorescence in scarlatina generally appears on the second day of the fever: in the measles, it is seldom very evident until the fourth. It is much more full and spreading in the former disease than in the latter, and consists of innumerable points and specks under the cuticle, intermixed with minute papulæ, in some cases forming continuous, irregular patches; in others coalescing into a uniform flush over a considerable extent of surface. In the measles the rash is composed of circular dots, partly distinct, partly set in small clusters or patches, and a little elevated, so as to give the sensation of roughness when a finger is passed over them. These patches are seldom confluent, but form a number of crescents, with large intervening portions of cuticle, which retain their usual appearance. The colour of the rash is also different in the two diseases, being a vivid red in the scarlatina like that of a boiled lobster's shell; but in the measles a dark red, with nearly the hue of a raspberry.

During their febrile stage, the measles are distinguished by an

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* See his Observations on the Prevention and Cure of Scarlet Fever.

obstinate harsh cough, forcing up, in repeated paroxysms, a tough acrimonious phlegm; by an inflammation of the eyes and eyelids, with great sensibility to light; by an increased discharge from the lachrymal glands, sneezing, &c Scarlatina is frequently attended with a cough, as also with redness of the eyes; but on minute observation, it will generally be found that the cough in scarlatina is short and irritating, without expectoration; that the redness of the eyes is not attended with intolerance of light; that the ciliary glands are not affected; and that, although the eyes appear shining and watery, they never overflow. In scarlatina there is usually a peculiar sensation of anxiety, depression, and faintness, in all cases which are attended with fever; whereas in the measles symptoms of general inflammation are to be met with, except where the disease appears under a malignant form.

The following are the chief distinctions between scarlatina mitis and cynanche maligna. The fever in the former is somewhat of an inflammatory nature, and is unattended with sloughy ulcerations in the throat: in the latter these are always to be observed, the breath is very fetid, and the accompanying fever is of the typhoid kind. In scarlatina the skin is of a brighter scarlet, smooth, and always dry and hot; in cynanche maligna it is red and pimply, the pimples being redder than the interstices.

Scarlatina mitis, like all other fevers, begins with languor, lassitude, confusion of ideas, chills, and shiverings, alternated by fits of heat. The thirst after a little time becomes considerable, the skin dry, and the patient is often incommoded with anxiety, nausea, and vomiting.

The alvine evacuations are most commonly of the usual quantity; the urine is high-coloured and turbid; and the pulse is weak, and varying from 100 to 120 strokes in a minute. In a few cases some slight affection of the fauces is perceived.

About the second or third day the scarlet efflorescence appears on the skin, which seldom produces, however, any remission of the fever. On the departure of the efflorescence, which usually continues out only for three or four days, a gentle sweat comes on, the fever subsides, the cuticle or scarf-skin falls off in small scales, and the patient gradually regains his former strength and health. Such is the disease in its mildest aspect.

In scarlatina anginosa the patient is seized not only with a coldness and shivering, but likewise with great languor, debility, and sickness, succeeded by heat, nausea, vomiting of bilious matter, soreness of the throat, inflammation and ulceration of the tonsils, uvula, and velum pendulum palati, a frequent and laborious breathing, and a quick, small, and depressed pulse. When the efflorescence appears, it brings no relief; on the contrary, the symptoms are much aggravated, and fresh ones arise.

In the progress of the disease, one universal redness, unattended however by any pustular eruption, pervades the face, body, and limbs, which parts appear somewhat swoln. The eyes and

nostrils partake likewise more or less of the redness; and in proportion as the former have an inflamed appearance, so does the tendency to delirium prevail. There is moreover at acrid discharge from the nostrils, which excoriates whatever part it falls upon.

On the first attack of scarlatina anginosa, the tonsils and uvula are much inflamed, but the inflammation is soon succeeded by dark-coloured sloughs, from three to five lines in diameter, or under the surrounding surface, and which conceal beneath them spreading gangrenous ulcers. These occasion the breath to be highly fetid. The patient is often cut off in a few days.

Even if he recovers, it will be by slow degrees, and probably anasarcous swellings will ensue. In some instances, swellings of the submaxillary, parotid, or other small glands arise, and prove troublesome and tedious in suppurating.

The malignant form of the disease is characterized by the following appearances: its symptoms, on the first day, are nearly the same as in the scarlatina anginosa; but some of the following peculiarities are afterwards observable. The pulse is small, indistinct, and irregular; and the tongue, teeth, and lips, are covered with a brown or black incrustation. There is a dull redness of the eyes, with a dark red flushing of the cheeks, deafness, delirium, or coma. The breath is extremely fetid; the respiration rattling and laborious, occasioned partly by a viscid phlegm clogging the fauces; the deglutition is constricted and painful; and there is a fulness and livid colour of the neck, with a retraction of the head. Ulcerations are to be observed on the tonsils and adjoining parts, covered with dark sloughs, and surrounded by a livid base; and the tongue is often so tender as to be excoriated by the slightest touch. An acrid discharge flows from the nostrils, causing soreness, or chops, nay even blisters, about the nose and lips; the fluid discharged being at first thin, but afterwards thick and yellowish. The rash is usually faint, excepting in a few irregular patches; and all of it presently changes to a dark, or livid red colour. It appears late, is very uncertain in its duration, and often intermixed with petechiæ. In some instances the rash disappears suddenly a few hours after it is formed, and comes out again at the expiration of two or three days. In an advanced stage of the disease, where petechiæ and other symptoms characteristic of putrescency are present, hæmorrhages frequently break forth from the mouth and nose.

When scarlatina is to terminate in health, the fiery redness abates gradually, and is succeeded by a brown colour; and the skin becoming rough, peels off in small scales: the tumefaction subsides, and health is gradually restored. On the contrary, when it is to terminate fatally, the febrile symptoms run very high from the first of its attack, the skin is intensely hot and dry, the pulse is very frequent but small, great thirst prevails, the breath is very fetid, the efflorescence makes its appearance on the second day, or sooner, and about the third or fourth is probably interspersed

with large livid spots; and a high degree of delirium ensuing, or hæmorrhages breaking out, the patient is cut off about the sixth or eighth day. In some cases a severe purging arises, which seldom fails to prove fatal. Some again, where the symptoms do not run so high, instead of recovering, as is usual, about the time the skin begins to regain its natural colour, become anasarcous, or fall into an atrophy, and are carried off in the course of a few weeks.

Scarlatina in its mild state is not usually attended with danger; but when it partakes much of the nature of cynanche maligna, or discovers a putrid tendency, it often proves fatal. The discharge of a highly acrid matter from the nose, diarrhœa, the fauces of a dark red or purple colour, without swelling, ash-coloured or brown specks, soon becoming ulcerated, great prostration of strength, delirium, coma, anxious difficulty of breathing, petechiæ, and hæmorrhages, are very unfavourable symptoms.

When scarlet fever is very mild and wholly unattended by any inflammation or ulceration in the throat, little more will be requisite than to keep the apartment clean and open; to enforce a light diet without animal food; to direct cooling acidulated liquors for common drink, and to administer gentle medicines suitable to the symptoms that present themselves.

In more severe cases, where the skin is very hot and dry, the pulse much accelerated, the head very painful, and advice is called for at the onset of the disease, the best step we can adopt, is to have recourse to affusion, or immersion in cold water, for the speediest and most effectual relief will be obtained by it. In private practice, where there often arises much difficulty in subduing prejudices, and we are prevented from making use of cold affusion, or immersion, we must be content to substitute simple ablution pretty generally over the whole body with a sponge dipped in equal quantities of cold water and vinegar.

Dr. Currie mentions in his Medical Reports, that he found the affusion of cold water to extinguish incipient scarlatina in repeated instances, so as to prevent either efflorescence or any affection of the throat from taking place. He says, "The plan that I follow, if called in at this early period, where the patient feels steadily hot, and the shivering having gone off, is to strip him quite naked, and dash four or five gallons of the coldest water over his naked body; the heat returning, it is sometimes necessary to use it ten or twelve times in twenty-four hours." During this time, he says, cold water and lemonade should be used as drinks, and the bowels opened, if necessary, by the submuriate of mercury. In a few cases he has thought it advisable to assist the affusion by the diaphoretic power of a solution of tartarized antimony. He adds, that in upwards of 150 cases he uniformly followed the practice here detailed, and with a degree of success so nearly invariable, that he could not contemplate it without emotions of surprise, as well as of satisfaction.

We are also informed by Dr. Mosman,* that during the hot stage of scarlatina he has seen the most happy effects derived from sponging the body over with cold vinegar and water, and by allowing a free current of air through the patient's chamber. He very properly cautions us, however, against such a practice, when the least chilliness prevails, or where there is a tendency to perspiration. In such cases, tepid water and vinegar may be substituted.

Some communications from Dr. Reid,† physician at the time to the Finsbury Dispensary, bear also ample testimony of the unequivocal efficacy and success which attended the use of cold and tepid ablution in many cases of scarlatina. He mentions, it ought to be kept in mind, that in an early stage of the disease, when the strength is not much reduced, when the skin is hot and dry, and where the febrile anxiety is considerable, cold washing is decidedly indicated. But when extreme debility has come on, after the fever has continued for several days; when the pulse is small and irregular, and the skin more relaxed; then the reaction produced by cold washing might prove too violent, and of course, in such cases, tepid sponging is preferable.

The experience which I have had, not only of the perfect safety, but likewise of the utility of both affusion and ablution with cold water at the onset of scarlatina, where there is great heat and dryness of the skin, with considerable febrile anxiety, and a rapid pulse, induces me to regard these remedies as means very likely to afford decided relief, and under such circumstances to recommend their being more generally adopted than what they are. In an advanced stage of the disease, tepid ablution will certainly be preferable.

On the first coming on of both scarlatina mitis and scarlatina anginosa, it would seem proper to administer an emetic of ipecacuanha, for the purpose of dislodging any mucus that may have accumulated in the throat. In the last, more particularly, I am fully convinced it ought never to be omitted; and probably a slight repetition of it might be the means of preventing any disposition to diarrhœa, which is so apt to arise, from a considerable quantity of acrid matter passing from the fauces into the stomach, and from thence to the intestines.

After vomiting, it will be proper to dislodge all feculent matter from the bowels by means of some gentle aperient;‡ and during the remainder of the disease, if costiveness arises, it must be obviated by laxative clysters, administered from time to time, as

* See Dr. Duncan's Annals of Medicine for 1799, Article xii.
† See Medical and Physical Journal, vol. xi. page 27.

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‡ 1. ℞ Hydrargyri Submuriat. gr. iij.
Pulv. Rhei, vel Jalapæ, gr. vj.—xij.
M.
ft. Pulvis aperiens ex melle sumendus.

‡ 1. Take Submuriate of Mercury, three grains.
Powdered Rhubarb, or Jalap, from six to twelve grains.
Mix them in a little honey.

the occasion may require. These, as inducing no debility, will be far preferable to purgatives, when the disease has made some progress. Purgatives ought indeed carefully to be avoided, except on the first onset of scarlatina; and even then, whatever we employ should be of the mildest nature, lest we should induce diarrhœa, which is apt to occur of itself.

This precaution, with respect to administering purgatives in scarlet fever, but more particularly in that species of it which has been denominated scarlatina anginosa, although sanctioned by the opinion of most of our eminent physicians, and ratified by my own experience, by no means accords with the directions of a modern writer;* for he tells us, that in treating scarlatina he has confided much in the use of purgative medicines, and that no variety of the disease has prevented him from pursuing this practice to the extent he judged necessary. He indeed somewhat qualifies this mode of treatment, by afterwards acknowledging, that he wishes to limit their effects to the express purpose of unloading the bowels, and securing the complete expulsion of their contents, without inducing what he calls full purging.

Bleeding from the system will not be necessary in scarlatina mitis, even although a slight inflammatory diathesis may seem to prevail on its attack. In those cases of scarlatina anginosa where the tonsils are so much inflamed and swelled as to impede deglutition, or considerably interfere with respiration, it will be much safer to apply a few leeches under each ear, and draw blood in this way from the neighbourhood of the parts immediately affected, than from the system by venesection. Where the eyes look red and fiery, and a high degree of delirium prevails in scarlatina, the application of two or three leeches to each temple may be resorted to with safety, and possibly with some relief.

The physicians on the Continent have indeed recommended drawing blood from the arm, or, when the head is much affected, from the jugular veins; and it appears that Morton adopted the same practice in many of the cases he attended in London: but I think there will be found very few among *our* modern physicians who would advise it, particularly in scarlatina maligna, even at an early stage of the disease. Dr. Armstrong† is, however, among the few who approve of venesection; and we are told by him that experience in scarlatina has induced him to abandon the stimulant plan of treatment, even in the most malignant forms of the complaint, from having ascertained its inefficacy: and that since he has had recourse to depletory measures of an active and decided kind, he has practised in the disease with much more satisfaction of mind, arising from far greater evidence of success.

Even in scarlatina maligna let the practitioner, he says, give a fair trial to the cold affusions as soon as the stage of excitement

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* See Observations on the Utility of Purgative Medicines, by Dr. Hamilton.

† See his Practical Illustrations of the Scarlet Fever, &c.

is developed; and if they should not effectually reduce the fever, let him not pause an instant longer, but open a vein in the arm or neck, or even a branch of the temporal artery, and allow the blood to flow until it is stopped by approaching faintness. If this should not give, he adds, a marked relief to the most prominent symptoms, a second but more moderate venesection should be tried in an hour or two afterwards. The putrid symptoms only occur, he says, in the stage of collapse, and are the products of the preceding stage of excitement. The head must be always raised very high, and after having been shaved, it should be repeatedly covered with folds of linen soaked in cold water. Immediately after the bleeding, the bowels are to be opened by a large dose of submuriate of mercury and jalap, aided by a solution of the sulphate of magnesia, or some other neutral salt, and the purgative plan must be persisted in vigorously until there is a visible change for the better in every respect.

It must however be recollected, he observes, that these powerful proceedings must be solely confined to the stage of excitement, and that unless they are carried into effect within the first thirty hours of that stage, nothing decidedly beneficial is for the most part to be expected from them.

To determine gently to the surface of the body, it may be advisable to give the saline medicine from time to time, blended with small doses of some antimonial.*

Throughout the whole course of the disease, if there is either inflammation or ulceration in the throat, it will be proper to make frequent use of some detergent gargle, as recommended under the heads of Cynanche Tonsillaris and Maligna; which in young children may be thrown into the fauces with a syringe, as they seldom can be prevailed on to gargle.

A little of the linimentum ammoniæ subcarbonatis may at the same time be rubbed twice or thrice a day externally, covering the parts afterwards with flannel. Where the throat is much affected, a mustard poultice may be applied, and kept on as long as it can be borne without producing too great a degree of irritation. When the fauces are in a sloughing or gangrenous state, a warm fomentation of nitric acid largely diluted, together with the stimulating gargle of Cayenne pepper, as mentioned under the head of Cynanche Maligna, will be likely to prove highly serviceable.

Blisters have been employed by some practitioners in those cases where the deglutition is difficult, the head much affected, or a high degree of delirium has arisen; but they have too frequently been

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* 2. ℞ Haust. Salin.
Mistur. Camphoræ, āā f. ℥vj.
Antimon. Tartarizat. gr. $\frac{1}{6}$.
Syrup. Cort. Aurant. f. ℥j. M. ft. Haustus 4tis horis sumendus.

* 6. Take Saline Draught,
Camphor Mixture, of each six drachms.
Tartarized Antimony, sixth of a grain.
Syrup of Orange Peel, 1 drachm.
Mix them as a draught, to be taken every four hours.

observed to prove detrimental, by rather increasing the irritation of the patient. Immersing the feet and legs in warm water might probably be attended with a good effect. When blisters are applied under a tendency to putrefaction, they are apt to become gangrenous. In scarlatina maligna they never, therefore, should be used.

To obviate inquietude and restlessness, opiates are sometimes resorted to; but where the head is much affected, or there is delirium, they would prove injurious. Æther, and the spiritus ætheris compositus, or Hoffman's liquor, would be more suitable remedies on such occasions.

In those cases of scarlatina which show a disposition to malignancy or putrescency, it will be advisable to give the bark of cinchona in substance, decoction, or infusion, (as shall be found to sit easiest on the patient's stomach,) along with the mineral acids, (particularly the muriatic,) wine, and other antiseptics, from the first commencement of the disorder.—See Typhus Gravior.

As an antiseptic, carbonic acid gas has sometimes been used in this species of the disease with advantage. The best way of giving it is, by administering the neutralized medicine in such a manner as that the evolution of the gas may wholly take place in the stomach, which is to be done by the patient's taking the potassæ subcarbonas and lemon-juice in separate draughts immediately after each other.

The oxygenated muriatic acid is a remedy which has been much employed of late in scarlatina anginosa, and in many instances with a very beneficial effect, even at an advanced stage of the disease. The proper quantity for persons from fourteen to twenty years of age, will be about one drachm of it in the course of twelve hours, divided into small doses, and given at proper intervals. For younger patients a less quantity will be sufficient. As a vehicle to administer the oxygenant remedy in, we may use common water or a weak infusion of calumba; and to prevent the disoxygenating influence of the light, the medicine should be placed in a dark situation, wrapped in paper. In administering it to the patient, it will be necessary to caution the nurse or other attendant not to employ a spoon, lest a poisonous fluid be thereby conveyed into the stomach, by the oxygen rapidly oxydating the metal of which it is composed. We may also employ the oxygenated muriatic acid i the form of gargle* in scarlatina anginosa.

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* 3. ℞ Aq. Hordei, f. ℥vij.
Mellis Rosæ, f. ℥j.
Acidi Muriat. Oxygenat. f. ℥j.
Tinct. Myrrh. f. ℥ss. M.
ft. Gargarisma.

Vel,

4. ℞ Piperis Indici, ʒij.
Aq. Ferventis, f. ℥v Macera, et colaturæ adde

* 3. Take Barley Water, seven ounces.
Honey of Roses, one ounce.
Oxygenated Muriatic Acid, one drachm.
Tincture of Myrrh, half an ounce.
Mix them and use as a gargle.

Or,

4. Take Cayenne Pepper, 2 scruples.
Hot Water, five ounces. Let them infuse, and to the strained liquor add

It may not be improper to mention, that camphor is a medicine much employed in scarlatina, and often with a seeming good effect; but more particularly in those cases where the pulse is very low, or the efflorescence disappears suddenly. In these instances ammonia, the aromatic confection, warm bathing, and wine, will likewise be advisable.

A solution of the subcarbonate of ammonia, in the proportion of two drachms to five ounces of water, of which two tea-spoonsful are to be taken every two, three, or four hours, according to the urgency of the symptoms, is another remedy which has been found highly beneficial in this disease.*

My usual plan of proceeding in both scarlatina anginosa and scarlatina maligna is, to give a decoction of the bark of cinchona, with an equal quantity of wine and a few drops of oxygenated muriatic acid, and in two or three hours afterwards the draught† of camphor and ammonia, and so on alternately; which mode of proceeding I have found to be very successful.

If a purging arises in scarlatina anginosa, it ought to be suppressed as soon as possible, by astringents joined with aromatics, opium, and wine.—See Diarrhœa.

The œdematous disposition which ensues after some cases of scarlatina is to be removed by diuretics, joined with tonics and a generous diet, as advised under the head of Anasarca, giving at the same time some gentle laxative occasionally. By the generality of practitioners this œdema has been considered as a disease of atony, but we are told by the author of a small tract,‡ that his experience has proved it a true arterial dropsy, (as he terms it); and he says that bleeding will often cure it without any assistance from medicine, but that purging is the safest and readiest means of relief, and not bark and aromatics, hitherto generally prescribed in such cases.

In most cases of scarlatina, when the fever has subsided, the cinchona, stomachic bitters, chalybeates, the mineral acids, wine,

* See Dr. Peart's Treatise on the Malignant Scarlet Fever and Sore Throat.
‡ See Dr. G. Gregory's L[illegible]e on Dropsy.

Decoct. Cinchon. f. ℥iij.

Acid. Muriat. Oxygenat. ft. ℥j. M. ft. Gargarisma.

† 5. ℞ Camphoræ, gr. v. Solve in

Alcoholis, f. ℥ss. et adde
Aq. Puræ,
— Cinnam. āā f. ℥v.

Ammoniæ Subcarbon. gr. x.

Syrup. Cort. Aurant. f. ℥j.
ft. Haustus, 4tis horis capiendus.

Decoction of Peruvian Bark, three ounces.
Oxygenated Muriatic Acid, one drachm.
Mix them for a gargle.

† 5. Take Camphor, five grains. Dissolve it in
Alcohol, half a drachm; then add
Pure Water,
Cinnamon Water, of each five drachms.
Subcarbonate of Ammonia, ten grains.
Syrup of Orange Peel, 1 drachm.
Mix them and let this draught be taken every four hours.

a nourishing diet, pure air, and gentle excercise, will greatly accelerate the recovery of the patient.

Scarlatina being of a very contagious nature, and never failing to excite the greatest consternation and anxiety when it breaks out in schools and families, it seems right to notice the means which have been recommended,* under such circumstances, for checking its progress, and attempting its total extinction.

So long ago as 1779, Dr. Haygarth† preserved 37 boys from the scarlet fever in a boarding-school at Chester, by confining a patient ill of it to a violent degree, in a separate room of the same house, and by attention to perfect cleanliness. In a boarding-school at Bath, in 1805, two young ladies had a scarlet fever and a malignant ulcerated sore-throat, one of them dangerously. The governess visited the patients, and assisted to syringe their throats frequently in the day. After washing her hands, and with other strict attention to perfect cleanliness, so as carefully to avoid conveying any contagious dirt out of the sick chamber, but without changing her garments, she went among 65 of her scholars in the adjoining rooms of the house to hear their lessons and examine their work: not one of these young ladies was infected with the fever, as Dr. Haygarth was informed by the physician who attended these patients. The testimony of such numerous facts proves, beyond all controversy, that contagious miasms, in his opinion, do not adhere to clothes so as to infect others closely exposed to them. Hence typhus, scarlatina, &c. are always caught either by miasms issuing from the patient, or by miasms issuing from the contagious poison in a solid or liquid form discharged from the patient; but not by miasms adhering to clothes, &c. It completely confirms the fourth law of contagion mentioned under the head Typhus, which is of very great importance, being highly conducive to the simplicity, facility, and certainty of the rules of prevention. If, in future, a patient ill of either typhus or the scarlet fever, be permitted to infect the family, where there is a room in the house for the separation of the sick, it will be justly imputed to the want of knowledge or the want of care in the attendants.

All masters and mistresses of boarding-schools ought for their own sakes, as well as for the interest of the children committed to their care, to be provided with one or more separate apartments, in proportion to the size of the establishment, for the reception of invalids. These should be so contrived that the communication between the rooms appropriated for the sick and the rest of the house may be speedily and completely cut off at any time. If the establishment be too small to admit of such appendages under the same roof, a proper lodging should be reserved in the neighbourhood, to be always in readiness, whenever the occasion might require to resort to it.

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* See Dr. Blackburne's Observations on Scarlet Fever.

† See Dr. Haygarth's Sketch of a Plan to Exterminate the Small-pox, p. 247.

As soon as the fever manifests itself in one subject, the person so affected should be separated without delay from all the rest. The next essential step to be taken is to subdue unnecessary alarm and consternation; in the performance of which duty the parent or guardian must co-operate fully with the instructor. Where the scholars are numerous, and the extent and disposition of the premises admit of it, the best plan is not to disperse the school; for by dismissing the children, those in whom the infection is latent, and to be afterwards produced, thereby convey it to their respective families, and so promote the further propagation of the disease, to the great injury of the junior branches in particular, who are more susceptible of the contagion than adults. Having ascertained and cut off the source of infection; having separated the originally tainted as soon as they begin to sicken, and while they yet remain incapable of imparting disease; having disposed of them in proper apartments, and strictly enforced the rules of prevention; the evil may be crushed in its infancy. The extent and magnitude of the mischief will thus be accurately measured, and totally obviated.

But if the accommodations of the establishment be too limited for the complete execution of this scheme, or parents be unwilling to commit their offspring to any other than their own inspection in the time of illness, it is a sacred duty imposed on them not to admit even a suspected child, much less a diseased one, into family intercourse with themselves, their other children, or their servants. A separate apartment, where circumstances allow of such a convenience, ought to be in readiness, or in a state to be made ready, for accidental sickness; and this should be at the top of the house, or upper story, as the current of heated air is naturally upwards, and the atmosphere loaded with contagious steams emanating from the body, will, if the patient be in a lower apartment, diffuse themselves over the whole house, whereas, if he be placed above, they will have a ready vent. Here a strict quarantine should be performed, whether the subject be suspected or convalescent, the period of which may be regulated, partly by what is already known on the subject, and finally determined by future observation and the result of aggregated facts. If the child be really infected, immediate separation, with a suitable regimen, should be adopted.

To annihilate the powers of contagion, we may employ fumigations with manganese, salt, and sulphuric acid, as advised under the head of Dysentery: or we may have recourse to those of the muriatic or nitric acid, as noticed under that of Typhus Gravior.

In regard to prevention, it is obvious that an improvement of the diet in such as live low, moderate exercise in the open air, cold bathing, and in short every mode of strengthening the constitution, with great attention to cleanliness and ventilation, must have a tendency to ward off the disease. Those who are in attendance ought as much as possible to avoid inhaling the breath of the sick, as it is clear that scarlatina, as well as some other diseases,

may be so received. By using a gargle of capsicum frequently, as noticed under the head of Cynanche Maligna, they probably may be enabled to resist contagion the better.

PESTIS, OR THE PLAGUE.

THE plague is a very malignant fever of a putrid and contagious nature, in the progress of which extreme debility, buboes, carbuncles, petechiæ, hæmorrhages, colliquative diarrhœa, and such other symptoms arise. The contagion of the plague is of a specific nature, giving rise to febrile symptoms, and particularly affecting the nervous and glandular system.

Sir James M'Gregor, in his Medical Sketches of the Expedition from India to Egypt, notices, that the plague is subject to considerable varieties in different seasons and circumstances. In the Indian Army, he observed, that when the disease first broke out, the cases sent from the crowded hospitals of the 61st and 88th regiments were, from the commencement, attended with typhoid or low symptoms. Those which were sent from the Bengal volunteer battalion and from the other corps, when the army was encamped near the marshy ground at El-Hammed, were all of the intermittent and remittent type. The cases which occurred in the cold rainy months of December and January, had much of the inflammatory diathesis: and in the end of the season, at Cairo, Ghiza, Boulac, and on crossing the isthmus of Suez, the disease wore the form of a mild continued fever.

The appearances of the plague have been arranged by different authors in different ways. The French writers on the subject have specified five varieties: Dr. Russel has extended them to six: but the arrangement of Sir Brooke Faulkner,* drawn from extensive observation during the late appearance of that complaint in the island of Malta, which admits only of three species, appears to be the most judicious; and this I shall therefore adopt. The propriety of distinguishing the plague into three species is also sanctioned by a small tract from the pen of Dr. Pearson.†

The plague is by most writers considered as the consequence of pestilential contagion, which is propagated from one person to another by association, or by coming near infected materials.

Some, however, have doubted whether the disease is really contagious or not, whilst a few‡ have asserted positively that it is not so: an absurd doctrine truly, which, if acted upon by the Legislature, would be likely to be attended with the most injurious consequences. The fact that it is evidently contagious is fully established in Sir James M'Gregor's opinion; but the laws of its

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* See his Essay on the Plague, inserted in the Edinburgh Medical and Physical Journal, vol. x.

† See his Brief Description of the Plague.

‡ See Dr. M'Lean's Researches in the Levant concerning the Plague.

transmission are not more accurately known than the specific nature of the contagion. Dead bodies, we are told, did not seem to convey it; the heated animal body, and still more with a febrile moisture on the skin, appeared to transmit it most readily. Among the most obvious causes which contribute to induce the plague, besides contagion, may be enumerated the following, viz. corrupt or damaged grain, putrid fish or other animal substances, noxious exhalations arising from stagnant waters or slimy mud, a residence in confined situations where the current of air is obstructed, and the want of due cleanliness.

The disease attacks persons of all ages and both sexes indiscriminately; but women, young people, and infants at the breast, have been observed in general to resist infection more than robust men. Those who were exposed to vicissitudes of heat and cold, such as bakers, cooks, and smiths, were noticed, during the campaign in Egypt, to be more particularly attacked with it.

In all epidemic plagues, terror and anxiety, filth and defective nutriment, fatigue and hurry, anger and intemperance of every description, have acted as predisposing and accelerating causes of the distemper.

In some Eastern countries the plague is wholly unknown, but more particularly in Persia and Japan. The Egyptians denominate the winter and early part of the spring their season of the plague, which they acknowledge never passes without this disease appearing in some degree. It has also been remarked that the rise, progress, and abatement of this disease in different years, bear a striking resemblance to each other. At its first appearance, which is usually in November, it assumes its most deadly form, and those affected by it sink into the grave almost without complaint. During the winter and beginning of spring, it scarcely manifests any diminution of its virulence, but towards the end of the latter, when the weather increases in warmth as the summer approaches, its attacks become less frequent, and its malignant symptoms subside into the appearances of ordinary disease, still however retaining the characteristic one of glandular affection. Towards the end of June, it is said to disappear.*

The plague is known to be most prevalent in Egypt soon after the inundation of the Nile, or rather its recession; for a quantity of slimy mud being deposited on the banks of the river and other places it has overflowed, occasions humid mephitic exhalations to arise, and which are supposed to produce the disease. From Sir Robert Wilson's account of the diseases of Egypt,† there is great reason to suppose that a humid state of the atmosphere is favourable to the production of the plague; for the English and Turkish armies which marched to Cairo escaped contagion, notwith-

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* See Mr. Webbe's Narrative of Facts relative to the Plague, in vol. vi. p. 118, of the Transactions of the London College of Physicians.

† See his History of the Expedition to Egypt.

standing almost every village was infected; while the troops that remained stationary on the moist shore of Aboukir were severely affected, and lost many men. A dry atmosphere appeared to him not only to be a preventive of the plague in some degree, but likewise to act as a remedy; for we are told that several men confined with this disorder in the hospital at Jaffa, escaped into the Desert, and endeavoured to reach the army; but finding the attempt impracticable, they returned in three days perfectly recovered.

Baron Larrey* observes that the plague puts on a more formidable appearance during the continuance of the south winds than during the winds from the north or north-east. When the latter prevailed, its effects were diminished; and if it continued for any time, the disease disappeared altogether. On the return of the south winds, (or khamsyn) it appeared again with as much violence as ever. A curious observation made by this gentleman was, that the plague rarely attacks wounded men whose wounds were in a state of plentiful suppuration; but as soon as the wounds were skinned over, a great many were seized, and few escaped death. He observed the same thing among the inhabitants of the country who had issues open. Galen, and many other celebrated writers, have also noticed, that in countries which they have seen ravaged by the plague, it had spared all those who had issues plentifully discharging.

It has been observed that the plague generally appears as early as the fourth or fifth day after infection; but it has not yet been ascertained how long a person who has laboured under the disease is capable of infecting others; nor how long the contagion may lurk in an unfavourable habit without producing the disease, and may yet be communicated, and the disease excited, in habits more susceptible of the infection. It has generally been supposed, however, that a quarantine of forty days is longer than is necessary for persons, and probably for goods also. Experience has not yet determined how much of this term may be abated. If I mistake not, the Board of Trade has, however, under the sanction of the College of Physicians, somewhat abridged it.

To repeal or abrogate the quarantine laws wholly because a few misguided men have asserted that the plague is not contagious, would be likely to bring down devastation on this nation, by exposing it to the visitation of a malady the most destructive of any to human life.

In the first species of the plague, according to the arrangement of Sir Brooke Faulkner, the energy of the brain and nervous system is greatly impaired, indicated by coma, slow, drawling, or interrupted utterance; the tongue is white, but little loaded with sordes, and usually clean, more or less, towards the centre and extremity; the anxiety is great, countenance pale, stomach extremely

* See his Memoirs of Military Surgery.

irritable, and the strength much impaired. Rigors and pain in the lower part of the back are among the early precursors of the other symptoms. This was observed by Sir Brooke Faulkner and the other physicians at Malta to be the most fatal species of the plague, and prevailed chiefly at the commencement of the late disaster. Those who were infected sometimes died in the course of a few hours, and with petechiæ.

In the second species, the state of the brain is the reverse of what takes place in the former, the symptoms generally denoting a high degree of excitement; the pain in the head is intense, thirst frequently considerable, though sometimes wanting, countenance flushed, and utterance hurried. The attack is ushered in by pain in the back, and rigors, as in the first species. Epistaxis not unfrequently occurs in this. Glandular swellings come out tardily, and after appearing, recede again without any remission of the general symptoms. Carbuncles arise over different parts of the body or extremities, which are rapidly disposed to become gangrenous. The delirium continues extremely high and uninterrupted, and the patient perishes in the course of two or three days. Sometimes he lingers on till the seventh, yet rarely beyond this period without some signs of amendment. Sir Brooke Faulkner found the instances of this second species very numerous, and they were nearly as fatal as the preceding. In the countenances of some of the sick, just previous to the accession of the more violent symptoms, there is an appearance of despair and horror which baffles all description, and can never well be mistaken by those who have once seen it.

The third species is somewhat akin to the last, only the symptoms are much milder, and the brain comparatively is little affected. The buboes and other tumours which make their appearance, go on more rapidly and kindly to suppuration; and by a prompt and early employment of remedies to assist the salutary operations of nature, the patient has a tolerable chance of surviving. Cases of this kind are often so mild, that persons have been known to walk about in seeming good health, and without any evident inconvenience from the buboes.

Such are the characteristic symptoms of this malignant disease, the varieties of which seem to depend in a great measure on the constitution or state of the air at the period of the epidemic prevailing, and on the habit of body of the patient at the time of the attack.

In no disease do patients bear motion worse than in this. The least motion has been known to induce syncope, and even death, particularly in the last stage of the complaint.

The plague is always to be considered as attended with imminent danger; and when it prevailed in this country about two hundred years ago, proved fatal to most of those who were attacked with it. It is probable, however, that many of them died from want of care and proper nourishment, the infected being

forsaken by their nearest friends; because in Turkey and other countries where attention is paid to the sick, a great many recover. Of the French army that invaded Egypt, little more, however, than one-third of all that were attacked with the plague recovered; as appears by the report made by Dr. Desgenettes,* who was chief physician to that army.

The duration of the disease is various. In some instances the effect of the pestilential contagion is the immediate extinction of life; and cases have occurred wherein the patient has survived but a few hours the first sensation of illness. In other instances again, he has lived till the thirteenth, and even the seventeenth day of the disease.

Where the plague is ushered in by fever and delirium, it is seldom that the patient recovers: in spite of every endeavour, he is generally deprived of life within forty-eight hours, or on the third day at furthest. If the fever does not occur until the second day from the attack of the disease, there is less danger, as time is thereby given to obviate the consequent symptoms.

When the plague is unattended by buboes, it runs its course more rapidly, and is more generally fatal, than when accompanied by such inflammations. The earlier they appear, the milder usually is the disease. When they proceed kindly to suppuration, they usually prove critical, and ensure the patient's recovery. Sudden death has, however, been known to happen even when the violence of the constitutional disturbance appeared to have been subdued, when buboes have made their appearance, were suppurating, and the patient considered convalescent. It is generally a favourable sign when the bubo does not adhere, but shakes on its base. A gentle diaphoresis, arising spontaneously, has been known in many instances to prove critical. When carbuncles show a disposition to become gangrenous, the event will be fatal. Furuncles, petechiæ, hæmorrhages, severe vomiting, and a colliquative diarrhœa, denote the same termination.

The worst forms of the disease are always accompanied with the usual symptoms of putridity and malignity; and such rarely terminate favourably. It has been remarked, that if a patient, after an access of delirium, was suddenly restored to his senses, he seldom recovered. Most cases terminate fatally wherein the patient is comatose from the beginning. The typho-mania may be regarded as a more fatal form of delirium than the inflammatory.

Dissections of the bodies of those who have died of the plague have discovered the omentum, stomach, and intestines gangrenous in some places; the liver in a state of congestion and considerably enlarged, the gall bladder filled with black fetid bile, and the

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* See his Histoire Médicale de l'Armée de l'Orient.

pericardium with a bloody fluid.* Proofs of inflammation and gangrene have also been found in the brain and its investing membranes, in the lungs, and kidneys. In many instances the glandular system has been found in a very diseased state, and the blood black and loose in its texture, similar to what occurs in putrid fever.

Under the supposition that a person has been exposed to the contagion of the plague, and in consequence of this becomes much indisposed, the first step to be adopted is to give him an emetic, particularly where nausea or vomiting ensues. If a severe retching should prevail after the operation of the emetic, this may possibly be relieved by administering the saline medicine in the act of effervescence; but if it should not, we may make an addition of a few drops of tinctura opii to each dose.

To obviate costiveness, and draw off any putrescent matter which may be lodged in the bowels, it will be necessary to make use of some gentle laxative: but large evacuations, by the aid of strong purgatives, would be very improper. In an advanced stage of the disorder, emollient clysters would be most advisable, as being less apt to excite diarrhœa, which, when it arises towards the close, generally destroys the patient. So careful are the Eastern nations in avoiding this occurrence, that they most commonly make use of suppositories only.

When a diarrhœa does occur, either spontaneously or from an improper use of cathartics, it should be suppressed as quickly as possible by astringents, opiates, and every other means we can employ.

We are informed by Dr. Russell, that many, particularly the Asiatics, make it a rule to let blood in all cases of the plague, if they see the patient at an early period; and some recommend it as late as the fourth, fifth, sixth, or seventh day; and even some European practitioners have gone nearly as far. To him it appeared that very plentiful bleeding at the first appearance of the disease was of great service.

Dr. Buchan was in the habit of occasionally resorting to bleeding, we are told by Sir James M'Gregor, and that during the first season he had met with several cases where the operation proved of the greatest service. The Turks, we are informed, employ local instead of general blood-letting, most commonly; and in the latter they draw off only a very small quantity.

Sydenham considered the plague as an inflammatory affection, and speaks of the efficacy of bleeding in the warmest terms; and Dr. Mead† not only advises venesection, but declares that we must draw blood with a more liberal hand than in other cases, if we are to expect success from it in this complaint. In opposition

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* See Memoirs of Military Surgery, by Baron Larrey, abridged from the French by J. Waller.

† See his Works.

to the opinion entertained by most modern physicians, who have considered the plague as an affection of direct and excessive debility, a late writer* asserts, on the contrary, that it is one of excitement and congestion, and of course he advocates the necessity of employing the lancet in its treatment.

The advantages of blood-letting in this disease appear to be of a very dubious nature; for we are given to understand that Dr. Whyte, one of the Physicians to the Forces in Egypt, used the lancet very freely, but that every one of his patients died. In the first stage of the disease, where there exists congestion or turgescence in any part of the body, the application of cupping-glasses, with previous scarification, may probably be a safer remedy than venesection.

It has been observed that a gentle diaphoresis sometimes proves critical, and carries off the disease, but more particularly when it arises spontaneously. To assist nature in throwing off the morbid matter by the pores, if possible, it will be right to employ diaphoretics, such as the neutral salts, small doses of antimonials, or the pulv. ipecac. compos. as advised under the head of Simple Fever; the effects of which may be increased, by directing the patient to drink plentifully of diluent acidulated liquors; and where the heat of the body is not very considerable, his strength may be supported under this operation by means of a little wine. Profuse sweating is, however, by all means to be avoided, as by inducing debility it would prove injurious.

Dr. Falconer of Bath, in his Essay on the Plague, seems to insinuate, that no small share of the mortality formerly observed in this disease may be attributed to the sweating regimen, then commonly employed for its cure. Instead of adopting this plan, he advises the avoidance of a warm bed, and indeed of a bed altogether, if possible, in the day time; a circulation of free and cool air, light clothing, cool drinks, and particularly cold water; and he mentions, that if any benefit is to be expected from the use of this regimen, it must be tried largely and steadily; not as if cold liquor were an indulgence permitted or allowed, but as a remedy enjoined, on which the principal dependence was to be placed. In addition to these means Dr. Falconer recommends the external use of cold water in the manner pointed out by the late Dr. Currie of Liverpool, and noticed under the head of Typhus Gravior.

Savary, in his Letters on Egypt, mentions an anecdote which is considered by Dr. Falconer as much to his purpose. The captain of a ship, whose sailors had contracted the plague at Constantinople, caught it himself by attending on them: he felt, as he expressed himself, excessive heat, which made his blood boil; the disease seized his head, and he perceived (as he thought) that he had only a few moments to live. The little remaining reason he had, taught him to attempt an experiment: he laid himself down

* See Illustrations of Typhus and other Febrile Diseases, by J. Armstrong, M. D.

quite naked on the deck : the heavy dews that fell, penetrated, according to his sensations, to his very bones. In a few hours he could breathe better ; his agitated blood became calm, and bathing the morning after in the sea, he was perfectly cured.

This case brings to my recollection another, of a French soldier, and reported by Dr. Desgenettes, who being afflicted with the plague threw himself into the Nile, under a high degree of delirium, and on being taken out of the water after a short lapse of time, soon recovered from the disease, seemingly in consequence of his immersion. A similar case is brought forward of the good effects derivable from the sudden application of cold water by Sir Brooke Faulkner, in his Observations on the Plague.*

Spunging the body with vinegar or citric acid has been found a useful remedy.

Camphor is a medicine which has been much recommended in the plague.

For the purpose of allaying irritation and procuring sleep, opiates are advisable, and, when used, have by no means been found to produce coma. They seem equally proper as in typhus.

If we are so fortunate as to procure a crisis by the remedies which have been advised, the bark of cinchona should be given in as large doses as the stomach will bear, and be repeated every two hours ; but if there is no chance of obtaining this desirable end, then, besides this bark, we should adopt the other means recommended under the head of Malignant Fever, with the view of obviating extreme debility and the disposition to putrescency.

A free use of both vegetable and mineral acids seems advisable in the plague as well as in typhus gravior. Acidulated drinks will be highly proper. Sir James M'Gregor, in his tract before mentioned, indeed hints that he found the nitric acid and other irregular remedies to be serviceable. He likewise employed mercury with, as he thought, some advantage ; and when the mouth was speedily made sore by it, recoveries oftener took place in the same manner as in yellow fever, than when the system proved unsusceptible of mercurial action.

It appears from this gentleman's report, that some patients were kept under the influence of wine and opium for a time, according to the Brunonian theory, but that the practice never proved successful.

Where the patient survives the disease, the treatment of the carbuncles or buboes becomes the province of surgery. Their development at an early period ought to be assisted by stimulants and rubefacients.

OF THE MODE OF PREVENTION.

It is well known that the pestilential virus which emanates from the human body may adhere for a long time to other substances,

* See Edinburgh Med. and Surg. Journal for April 1814, p. 151.

and preserve its power of producing and propagating future infection; and that in this manner it may be conveyed from the Eastern countries into any other; the persons first attacked by being exposed to the contagion then becoming the source of infection to others.

This fact being well established, it has been judged proper by the legislature of this kingdom and of some others, to oblige ships, persons, and all kinds of merchandise coming from places apt to be infected with the plague, to procure bills of health, or to undergo a certain quarantine, during which period the goods are, or ought to be, properly ventilated. An adherence to these regulations has of late years prevented the importation of the disease; but should it unfortunately ever be introduced, the following steps must be pursued for destroying the infection, and preventing its further propagation.

1st, The infected should be confined in lazarettos, surrounded by strict guards, and no kind of communication be held with them, except by such attendants as may be absolutely necessary.

2dly, The nurses or others employed in attending the sick, must take care to come in actual contact with them as seldom as possible, or place themselves in such a situation as that a stream of air may carry the effluvia towards them.* They should likewise pay an unrelaxing attention to personal cleanliness. Dresses of oiled silk have been strongly recommended by Sir Brooke Faulkner, as an invaluable armour to such persons as are constantly obliged to be about the sick.† One of these he wore himself, as did also the attendants in the military plague hospital at Malta, during the extensive prevalence of the disease, in the year 1813, in that island. Medical attendants will act prudently in changing their linen and clothes, and in well washing their whole body, but more particularly their hands, with warm water and vinegar, as soon as they quit the lazaretto.

3dly, All substances capable of being impregnated with the

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* It is a fact well known, that the pestilential poison, unlike other ordinary epidemics, is confined to the vicinity of the affected body, and becomes so dilute at the distance of a very few paces, as to be incapable of further action. Mons. Samoilowitz, a celebrated Russian physician, and author of a very good Memoir on the Plague, insists that this disease exists neither in the air, nor is communicated by the air, but by contact alone; and Mons. Sonnini tells us, that it is sufficient for Europeans settled in Turkey to shut themselves up in their houses in order to be preserved from the contagion, even when it makes the greatest ravages in towns which they inhabit, and although they draw from without their provisions and daily food.

The report made by Sir James M'Gregor likewise shows how very limited in extent is the action of contagion in the plague. Thirteen of the medical gentlemen of the army of Egypt were directly in the way of contagion, for it was their duty to come into contact with the infected; of these, seven caught the infection, and four died. To the atmosphere of the disease all the medical men of the army were exposed, as they saw and examined the cases in the first instance; but, except from actual contact, there never appeared to be any danger of contagion.

Although the disease is communicated chiefly by contact, yet it appears to me that authors go too far when they infer that it is not communicable by an atmosphere strongly tainted with pestilential miasma.

† See Edinburgh Journal for April 1814.

effluvia, or of vitiating the atmosphere, ought to be removed from the apartments of the sick to situations where the healthy cannot suffer by them, and where they may undergo a proper purification, by exposing them to a heat of about 120 of Fahrenheit, and then freely ventilating them. The linen and other clothes of the patient should be burnt. The dead should be immediately interred: probably combustion would be preferable to inhumation.

4thly, The atmosphere surrounding the infected ought to be kept as pure as possible, so that neither the patient nor his attendants may suffer from the exhalations: with which view, the strictest attention should be paid to cleanliness, a free ventilation, and fumigating with the nitric or muriatic acid, as advised under the head of Malignant Fever. A long stay in pestilential apartments that are but little aired, ought carefully to be avoided, as also the exhalations from the dead bodies, or from patients in the last stage of the disease.

5thly, To avoid whatever weakens the body, by giving way to intemperance or sensuality, or by making use of a poor diet, great fatigue, or considerable evacuation.

6thly, To keep the mind cheerful, and as free from care, anxiety, fear, and lowness of spirits, as possible.

7thly, As it is supposed that by strengthening the bodies of men we can thereby enable them to resist contagion the better, some advantages may probably be derived from using cold bathing, with wine, bark, and other tonic medicines, with a generous diet. Where access to the sea cannot be had, and water is scarce, the substitute proposed by a late writer* is, that a shirt be dipped every morning in a saturated solution of common salt in cold water, and after being well wrung out, to be put on wet and cold, keeping the body in motion for some time afterwards by moderate exercise.

Those who cannot keep themselves isolated from the contagion, will act prudently, in conformity to the observations of Baron Larrey and other writers, in opening a large issue, or perpetual blister.

In Dr. Duncan's Annals of Medicine for 1797, is inserted an article relating to the cure and prevention of the plague by frictions of the whole surface of the body with olive-oil, and communicated, as we are given to understand, by George Baldwin, Esq., at that period his Britannic Majesty's agent and consul-general in Egypt.

It is mentioned, that there is no instance of a person rubbing a patient having taken the infection; but, by way of precaution, it is advised to anoint himself all over with oil, and to avoid receiving the breath of the infected person into his mouth and nostrils. The prevention to be used in all circumstances, is that of care-

* See Description of the Plague, &c. by Richard Pearson, M.D.

fully anointing the body, and living upon light and easily digestible food.

A striking observation made by Mr. Baldwin is, that among upwards of a million of inhabitants carried off by the plague in Upper and Lower Egypt, during the space of four years, he could not learn that a single oilman, or dealer in oil, had suffered.*

Mr. Jackson, in his Reflections on the Commerce of the Mediterranean, likewise informs us, that in the kingdom of Tunis, where the plague frequently rages in the most frightful manner, destroying some thousands of the inhabitants, there never was known an instance of any of the coolies, or porters, who work in the oil-stores, being in the least affected by this disorder, their bodies being always well smeared with the oil, as well as their clothes being imbued with it.

It has been considered as pretty certain that in the generality of instances the contagion of the plague enters the body through the medium of the cutaneous lymphatics, and thence produces the disorder of the lymphatic glands. This idea is illustrated by the probability that the external use of oily frictions lessens the susceptibility to infection; and Sir James M'Gregor† mentions a fact which much favours the opinion, by observing, that the men who were employed in applying oily friction to the camels for some epidemy affecting them, escaped the plague.

The evidence produced in behalf of the plan communicated by Mr. Baldwin, seems more satisfactory as to the preventive powers of the application, than as to its sanative properties after the disease has once taken place. It seems, however, right to notice, that Dr. Assalini, who was a medical officer in the French army which invaded Egypt, makes favourable mention of oily frictions in his Observations on the Plague, as being generally followed by copious sweating; and to this he thinks their beneficial operation is to be attributed. We are also told by Mr. Jackson,‡ that he recommended the remedy to several Jews and Mussulmans during the time that the plague was depopulating West Barbary, in 1799 and 1800; and no instance of its failure, when duly persevered in, even after infection, had manifested itself, had come to his knowledge.

Inoculation for the plague has been tried by some physicians, in order to discover if this malady could not be checked or rendered less virulent thereby; and it appears from Sir Robert Wilson's History of the Expedition to Egypt, that Dr. Whyte, resolving to become the patient of his own speculation, during the time this disease raged at Rosetta, inoculated himself with matter taken from the buboes of an infected person. The attempt failed twice;

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* It has been said, that when the plague raged in London, about two hundred years ago, the dealers in pitch, tar, and tobacco, were particularly observed to escape the contagion.

† See his Medical Sketches.

‡ See his Account of the Empire of Morocco.

the third proved fatal in three days after the symptoms showed themselves.

It likewise appears that Dr. Desgenettes, in order to lessen the general alarm, and to inspire confidence among the French troops, inoculated himself both in the groin and arm-pit, with a lancet dipped in the pus of a bubo in a convalescent patient. The inoculation, however, failed; and the only consequence was a slight inflammation on the inoculated parts, which continued for more than three weeks.

As the future susceptibility to the disease is by no means, however, destroyed—for the same person may be afflicted with it repeatedly, and even may be attacked twice in the same season with it, as Dr. Desgenettes experienced, (many of the convalescents from the plague, who were appointed to take care of the sick, having been, he observes, seized a second time,)—this experiment would not be advisable, unless it could be ascertained that the disorder is rendered milder by the inoculation. This is a point not yet, however, established: indeed, the information afforded us by Mons. Sonnini* seems to lead to a contrary conclusion; for he mentions, that a Russian surgeon, who was a prisoner at Constantinople, with a number of his countrymen, took it into his head to inoculate these unfortunate men with the plague, under the supposition of rendering the contagion less destructive; but by doing so he killed two hundred of these prisoners: and fortunately for the rest, the inoculator, after having performed the operation on himself, soon died of his own treatment.

By a paper read before the Royal Society of London, on the 27th of June, 1816, it appears, from comparative experiments on the disinfecting powers of vinegar, chlorine, and the fumes of sulphur, that the best and most efficacious method of disinfecting letters coming from places supposed to be visited by the plague, is to expose them to the fumes of burning sulphur, mixed with nitrate of potass.

MILIARIS, OR MILIARY FEVER.

THIS fever takes its name from the small pustules or bladders which appear on the skin, resembling in shape and size the seeds of millet, being in general numerous on the breast, back, and other parts where there is most moisture on the skin. It may be distinguished from the other exanthemata by its pathognomic symptoms, the peculiar sour and rank odour of the sweat, attended with dejection of spirits, oppression, and sense of constriction about the precordia, anxiety, and frequent sighing.

Many of our modern physicians seem to think that the disease is never a primary one, but arises in consequence of some other;

* Travels into Greece and Turkey, p. 497.

particularly where much sweating has been excited, either by keeping the patient too warm, or by giving heating medicines.

All debilitating powers, such as a lax habit of body, weakness, however induced, excessive evacuations, the presence of irritating matter in the primæ viæ, the period of child-birth, long-continued menstruation, &c., may be regarded, most probably as predisposing causes, while the hot regimen is to be looked upon as the principal exciting cause of the eruption. This conclusion seems justifiable, as it is found, that whatever the state of the patient may be, miliary eruption is very generally avoided by exposure to cool air, and administering cold liquors.

It has been observed to affect both sexes, and persons of all ages and constitutions, but that females of a delicate habit are most liable to it, particularly in child-bed. It is, however, by no means a contagious disease, and has rarely, if ever, been known to prevail epidemically.

Moist variable weather predisposes most to this eruption, and its occurrences are more usual in the spring and autumn than in the other seasons. Winter is the least favourable to its appearance.

Miliary fever makes its attack with a slight shivering, succeeded by heat, restlessness, loss of strength, depression of spirits, anxiety, sighing, difficulty of breathing, oppression at the chest, and a low quick pulse. The tongue appears white, the mouth is dry, the body costive, and when the disease is violent, coma or delirium is apt to arise. Great dejection of spirits and anxiety, with fetid sweats, are, however, the most common forerunners of the miliary eruption.

The patient after a short time feels an itching or pricking pain under the skin, soon after which innumerable small pustules, of a red colour, and of the size of millet seeds, come out first upon the neck and breast, thence gradually extending to the trunk and extremities; their prominence is imperceptible to the sight, yet evident to the touch; they often lose their redness, and appear of the ordinary colour of the skin. They are usually distinct, but now and then we may perceive them clustered together.

About the second day after the appearance of the eruptions a small vesicle may be observed on the top of each pimple, and in two or three days more, they break, and are succeeded by small crusts, which fall off in scales. Sometimes it happens, that when one crop of eruptions has disappeared, another will succeed it.

On the eruption being visible, most of the foregoing symptoms are usually relieved. The sweating is apt, however, to continue, unless proper means are used to check it, and to be attended for many days with a fresh crop of eruptions.

The eruption being steady, and not disappearing after having come out; the fever inclining more to the nature of synocha than typhus; and there being a considerable remission of the symptoms upon the appearance of the eruption, denote a favourable issue; whereas great anxiety, dejection of mind, vast prostration of

strength, difficulty of breathing, flaccidity of the parts covered by the eruption, its sudden disappearance, a rapid, weak, and intermitting pulse, violent vomiting, profound coma, delirium, convulsions, petechiæ and other symptoms of putrescency, are to be considered as prognosticating a fatal termination to the disease.

The appearances to be observed on dissection will depend on the nature of the fever which accompanies the eruption, and which most usually is of the typhoid kind.

As the disease is evidently brought on by the application of too much heat, an early attention ought to be paid to the means of preventing it from appearing in those affections which it is apt to accompany. With this intent, the patient should not be covered with too many bed-clothes; neither should the chamber be kept hot by means of too much fire, or by being closely shut up; on the contrary, a sufficient ventilation ought to be allowed, so as to keep it of a proper temperature. In doing this, we are, however, to take care not to run into the opposite extreme, and to allow too free an admission of cold air.

Sweats which are not followed by an abatement of the febrile symptoms, cannot of course prove critical, and may therefore be safely and advantageously checked, by keeping the patient's apartment cool, by covering him lightly and loosely with bed-clothes, by making him lie with his arms exposed, and by giving him whatever he drinks perfectly cold; but in sweats which are likely to be critical, the practitioner must take care to regulate the admission of air, so as that it shall not prove prejudicial.

By adopting these precautions at an early period, we may often prevent miliary eruptions, which might otherwise have appeared: and after they have made their appearance, we probably may be able to moderate them, by using the same means.

Miliary eruptions sometimes accompany inflammatory affections; in which cases it will be necessary to have recourse to gentle aperients, or laxative clysters; but bleeding ought never to be used. They are found to attend more usually on diseases where much debility prevails, or where there is a disposition to putrescency; in which instances the patient's strength must be supported with wine and a nutritive diet; making use at the same time of tonics, the cinchona bark, mineral acids, and other antiseptics, as advised under the head of Typhus Gravior. Whatever debilitates, is, in most cases of miliary fever, pernicious; whatever supports the vigour of the system, beneficial.

Great sickness at the stomach is apt to precede any fresh eruptions that come out in the course of the disease, and to prove very distressing. To allay it, we may order small and frequently repeated doses of the mistura camphoræ.

Where delirium or coma comes on, blisters will be proper.—When a retrocession of the eruption happens, our principal view should be to bring out and support a sweat by powerful diaphoretics, camphor, ammonia, frictions to the skin, external warmth,

pediluvium, &c. Where any considerable evacuation ensues on a retrocession, we must be careful not to check it hastily. Should convulsions supervene thereon, musk and opium are particularly recommended.

To prevent the disease from arising in pregnant women, costiveness ought carefully to be guarded against; and when in child-bed, they should strictly observe a cool regimen, and keep their chamber of a proper temperature, being at the same time lightly covered with clothes.

PEMPHIGUS, OR VESICULAR ERUPTION.

THIS disease consists in eruptions dispersed over different parts of the body, internal as well as external, which gradually rise up into vesicles of about the size of a large nut, containing a yellow, serous fluid, that is in some instances of an ichorous nature, and which again disappear in the course of three or four days. By some authors it is described as being attended both by fever and contagion; and by others as being accompanied by neither. It is therefore supposed that there are two species of it, the chronic and the acute. The disease is, however, of very rare occurrence. Dr. Willan* describes three varieties of it, viz. pemphigus vulgaris, pemphigus contagiosus, and pemphigus infantilis; but he has never seen any instance of the first two. The last, he says, occurs sometimes in weak, emaciated children, who are destroyed by the pain and irritation of the successive vesications and ulcerations.

By the generality of the physicians who have favoured us with their opinions, the principal of whom is Dr. Dickson,† it has not been considered as contagious. This gentleman saw six cases of the complaint, in none of which it was received by contagion, nor communicated to those who attended the sick. Dr. Cullen informs us, that the blisters are filled with a thin ichor, which is discharged, not absorbed, as mentioned by Dr. Dickson; but during his whole practice it appears that he met only with a single case of pemphigus.

Some slight degree of lassitude, sickness, and headach having prevailed for a day or two, small vesicles of about the size of a pea make their appearance over different parts of the body, and not unfrequently in the mouth, and other portions of the alimentary canal; and these gradually increase till they become as large as a nut or almond. Now and then they are to be met with of the size of a walnut. They are surrounded by an inflamed margin, or areola, and distended with a faintly yellow serum. They often are accompanied with difficulty of deglutition, nausea, vomiting, a sense of soreness in the abdomen, and intense heat of the skin. Some-

* See his Treatise on Cutaneous Diseases.

† See his Paper on Pemphigus, in the Transactions of the Royal Irish Academy, 1787.

times they are so numerous as to run into each other. The pulse during this time is small and frequent, and the patient is sensible of a considerable degree of debility.

An intense burning heat of the skin appears to be a prominent feature of the disease; and in no other exanthematous fever is there usually felt so strong a sensation of heat; the vesicular eruption appearing to be the consequence of extreme action of the capillary vessels, thereby generating an increased evolution of heat, and augmenting the virulence of the discharge. The sensation it conveys to the patient is somewhat similar to a common scald, with a train of concomitant febrile symptoms.

After the vesicles have remained for some days, they either break and discharge their contents, or they begin to shrink, and so disappear.

This seems to be the most favourable termination, as they have been known to leave troublesome ulcers behind them when they broke.

Pemphigus resembles the small-pox, in frequently leaving pits in the skin, and in the parts which the vesicles occupied remaining of a dark colour for a considerable time afterwards. In the third volume of Medical Facts and Observations, Dr. Winterbottom takes particular notice of this occurrence.

We are to be influenced in our prognosis by the seat and appearance of the vesicles. When they appear only on external parts, and are not numerous, they demand little attention: when they are numerous, when they attack the alimentary canal, and are attended with a small hard pulse, and great prostration of strength, the danger is considerable. The danger is likewise very great when the ulcers left by the vesicles show a tendency to gangrene, by becoming livid; which seldom happens, however, unless a fever of the true typhoid kind has accompanied the eruption.

On taking a comprehensive survey of what has been recorded by eminent writers on the subject, (and in addition to those already referred to, I beg leave to add Dr. Hall,*) we must, I think, conclude, that pemphigus is an affection merely sporadic, and not of a contagious nature; that it is connected with a state of debility; and that the symptoms accompanying one or other instances of this affection are those which attend febrile diseases, whether inflammatory or putrid. The most important distinctions necessary to be ascertained appear therefore to be,

1st, Whether the fever is of an inflammatory nature, and accompanied with a strong and increased action of the vascular system: or,

2dly, Whether the fever has a tendency to the typhoid type, and is marked by great debility, and other symptoms which denote a tendency of the fluids to putrefaction. It will be obvious, that in

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* See Essay on Pemphigus, by Dr. Hall, in volumes 3d and 4th of the Edinburgh Annals of Medicine.

the first case evacuation and other antiphlogistic remedies will be proper; and that in the second it will, on the contrary, be necessary to shun all evacuations, and to employ those remedies alone which support the strength, and give tone and vigour to the system.

In some cases the disease seems to be connected with a certain state of debility, and a tendency of the fluids to putrefaction, and therefore the indications of cure are obvious.

Having cleansed the stomach by a gentle emetic, where nausea prevails, and dislodged the contents of the intestines by some mild laxative, such as the saline purgatives, small doses of the submuriate of mercury with jalap, we may then give the cinchona bark, either in infusion, decoction, or powder, along with wine. The mineral acids, in a state of proper dilution, if administered early, will likewise be of service in obviating the effects of debility, and any tendency to putrefaction.

On the first accession of the disorder, if the skin is hot and dry, it may be of service to give the saline medicine, with small doses of some mild antimonial, in order to excite a gentle diaphoresis; but these should not be continued long.

To diminish the effects of irritation, opiates combined with sulphuric æther will be proper.

Where vesicles arise in the mouth, and break, so as to become ulcers, we should then employ detergent gargles, as advised under the head of Cynanche Maligna.

If there is reason to apprehend that the eruption has extended to the alimentary canal, it will be necessary to order copious draughts of some mucilaginous decoction, as mentioned under the head of Aphtha Chronica.

When obstinate ulcers are formed on any exterior part of the body, in consequence of the vesicles breaking, the assistance of a surgeon will be requisite.

Some practitioners are in the habit of opening the larger vesicles, but the propriety of this step is not yet fully established.

On recovery, the patient's strength is to be recruited by tonics and other auxiliaries, as noticed under the head of Dyspepsia.

URTICARIA, OR NETTLE-RASH.

THIS disease takes its name from its being attended by an eruption in the skin, similar to what is produced by the stinging of nettles, and terminates in a desquamation of the cuticle. Dr. Willan, in his Treatise on Cutaneous Diseases, notices six varieties of it.—See Order III.

In some instances, a slight degree of fever either precedes or attends the eruption: this is not confined to any particular parts of the body, but is somewhat dispersed, being always accompanied with a considerable degree of heat and itching. In some persons it lasts only a few days, in others many months, appearing and dis-

appearing at intervals. It usually recedes in the day-time, and in the evening breaks forth again, accompanied sometimes with slight febrile symptoms. In some cases urticaria is characterized by large wheals or bumps, which, on pressure, appear of a solid nature, without any cavity or head; nor do they contain any kind of fluid.

The causes of urticaria are by no means obvious, but it has been supposed to arise from suppressed perspiration, or some irritating matter in the stomach. A disease very similar to febrile urticaria is produced in particular constitutions by substances received into the stomach which prove offensive, such as almonds, mushrooms, crab-fish, muscles, lobsters, herrings, &c. When a person is poisoned by fish of a deleterious nature, it frequently shows itself as a consequence thereof. (See Animal Poisons.) The effect is rapid, and the symptoms are violent for some hours. In consequence of such circumstances, physicians have been induced to conclude that urticaria, attended with fever, originates generally from indigestion, or from some substance of a noxious quality taken into the stomach.

The nettle-rash readily gives way, in general, to a cool regimen, and keeping the body open with mild laxatives, such as the potassæ supertartras, or any of the neutral salts. When it has arisen from any thing noxious being eaten, an emetic should be administered at the commencement of the attack. If it proves obstinate, we may resort to small doses of the submuriate of mercury and nitric acid. An infusion of serpentaria, made in the proportion of two drachms to a pint of water, is spoken very favourably of by a late writer* on chronic urticaria.†

ORDER IV.

HÆMORRHAGIÆ, OR INVOLUNTARY DISCHARGES OF BLOOD.

UNDER this title are comprehended active hæmorrhages only; that is, those attended with some degree of symptomatic fever, and which depend upon an increased impetus of the blood in the vessels from which it flows, chiefly arising from an internal cause. On venesection the blood appears as in the cases of phlegmasiæ; that is, the gluten separated, or a crust formed.

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* See Mr. Cook's Practical Treatise, &c. p. 209.

† According to the nosological arrangement of Dr. Cullen, Aphtha should have followed next as one of the Exanthemata; but being more frequently met with among infants than persons of a mature age, it has been inserted among the diseases of the infantile state.

Cachexia aphthosa, or chronic thrush, not being an idiopathic disease, but symtomatic of some other, such as general debility, is placed in the class Cachexia.

The general remote causes of hæmorrhages of this nature are, external heat, a sanguine and plethoric habit, whatever increases the force of the circulation, as violent exercise, strong exertions, anger, and other active passions, particular postures of the body, ligatures producing local congestion, a determination to certain vessels, rendered habitual from the frequent repetition of hæmorrhage, the suppression of accustomed evacuations, external violence, and exposure to cold.

Hæmorrhages may be occasioned either by too copious a production of the vital fluid, by some partial accumulation of it, or by the laxity or tenuity of the vessels which contain it. Hæmorrhage seldom, however, comparatively speaking, arises from a more than ordinary mass or impetus of blood, but in general from a want of that contractile power in the artery which is necessary to resist its tendency to effusion.

The general treatment of hæmorrhages must consist in putting a stop to the discharge of the blood; in preventing its recurrence, by removing the causes by which they were excited, and by destroying the inflammatory diathesis when any exists. These means remain to be pointed out under each distinct hæmorrhage, as in the subsequent pages.

EPISTAXIS, OR HÆMORRHAGE FROM THE NOSE.

In the nose there is a considerable net-work of blood-vessels expanded on the internal surface of the nostrils, and covered only with a thin tegument: hence, upon any determination of a greater quantity of blood than ordinary to the vessels of the head, those of the nose are easily ruptured. In general the blood flows only from one nostril; but in some cases it is discharged from both, then showing a more considerable disease.

Persons of a sanguine and plethoric habit, and not yet advanced to manhood, are very liable to be attacked with this complaint: females being much less subject to it than males, particularly after menstruation has commenced. Peculiar weakness in the vessels of the part, and the decline of life, may also be considered as predisposing causes. Great heat, violent exertion, external violence, particular postures of the body, and every thing that determines the blood to the head, are to be looked upon as its exciting causes.

Epistaxis comes on at times without any previous warnings; but at others, it is preceded by a pain and heaviness in the head, vertigo, tinnitus aurium, flushing in the face, heat and itching in the nostrils, a throbbing of the temporal arteries, and a quickness of the pulse. In some instances, a coldness of the feet, and shivering of the whole body, together with a costive belly, are observed to precede an attack of this hæmorrhage.

The complaint is to be considered as of little consequence when occurring in young persons, being seldom attended with danger;

but when it arises in those who are more advanced in life, flows profusely, and returns frequently, it indicates too great a fulness of the vessels in the head, and not unfrequently precedes apoplexy, palsy, &c., and therefore in such cases is to be regarded as a dangerous disease.

When this hæmorrhage arises in any putrid disorder, it is to be considered as a fatal symptom.

As a bleeding from the nose proves salutary in some disorders, such as vertigo and headach, and is critical in others, such as phrensy, apoplexy, and inflammatory fever, where there is a determination of too great a quantity of blood to the head; we ought properly to consider, at the time it happens, whether it really is a disease, or intended by nature to remove some other.

When it arises in the course of some inflammatory disorder, or in any other where we have reason to suspect too great a determination of blood to the head, we may suppose that it will prove critical, and therefore we should suffer it to go on, at least as long as the patient is not weakened by it.

Neither should it be suddenly stopped, when it happens to persons in good health, who are of a full and plethoric habit. In short, where a bleeding at the nose relieves any disagreeable symptom, and does not proceed so far as to induce debility, it ought not to be hastily checked.

When it arises in elderly people, or returns too frequently, or continues till the patient becomes faint, it ought to be put a stop to as quickly as possible: to effect this, the person is to be exposed freely to cool air, and to be placed nearly in an erect position, with his head somewhat inclined backwards; to drink freely of cold liquors, and to make use of an antiphlogistic regimen. Besides these means, he may immerse his head in water impregnated with ammonia muriata, or common salt, and snuff vinegar diluted with cold water frequently up the nose; or he may throw some astringent wash* repeatedly up the nostril from which the hæmorrhage proceeds, by means of a syringe.

Should the bleeding nevertheless continue, a dossil, dipped either in a solution of the sulphate of copper in water, the sulphate of

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* 1. ℞ Zinc. Sulphat. ʒj.
Plumbi Acet. gr. x.
Aquæ Distillat. f. ʒx. M.
ft. Injectio.

Vel,

2. ℞ Aluminis in pulv. trit. ʒij.
Aq. Rossæ, f. ʒvj.
Acidi Acetici dilut. f. ʒj. M.

Vel,

3. ℞ Tinct. Ferri Muriatis, f. ʒiss.
Aq. Distillat. f. ʒvj. M.

* 1. Take Sulphate of Zinc, one drachm.
Acetate of Lead, ten grains.
Distilled Water, ten ounces.
Mix them for an injection.

Or,

2. Take Powdered Alum, two drachms.
Rose Water, six ounces.
Distilled Vinegar, one ounce.
Mix them, and use the liquor as a wash or injection.

Or,

3. Take Tincture of the Muriate of Iron, one drachm and a half.
Distilled Water, six ounces.
Mix them.

iron in brandy, or in Ruspini's styptic, may be introduced up the nostril. A tent, wetted with the compound tincture of benzoin, and afterwards rolled in equal parts of alum and sulphate of zinc, may be tried upon a failure of the former. One of the most powerful styptics, however, which we can use, is powder of charcoal. In epistaxis, it may be applied by means of tents, first moistened with water, and then dipped in this powder; but in slight cases, it will answer by being taken like snuff.

To assist the effect of all such applications, a little cold water may be sprinkled with the fingers on the patient's face, and the genitals of a male be immersed now and then in the same fluid.

Dr. Darwin mentions in his Zoonomia the case of a lady who had a continued hæmorrhage from her nose for several days; the ruptured vessel was not to be reached by plugs up the nostrils, and the sensibility of her fauces was such, that nothing could be borne behind the uvula. After venesection, and other common applications, she was directed to immerse her whole head in a pail of water, which was made colder by the addition of several handsful of salt; in consequence of which, the hæmorrhage immediately ceased, and returned no more: but her pulse continuing hard, she was necessitated to lose blood from the arm on the succeeding day.

In epistaxis, the application of pressure to the mouth of the bleeding vessel is often attended with a good effect, when other means prove unsuccessful: to effect which, a piece of hog's gut, that has been previously dried and moistened again, may be used. One end of it, being firmly tied with a bit of small packthread, is, by means of a probe, to be pushed along the course of the nostril from which the blood is disharged, to the upper part. The gut is then to be filled with cold vinegar and water by means of a syringe inserted at the end hanging out of the nostril; and, as much being injected as the gut will admit, the whole is to be pressed up as far as possible, and to be then secured in this situation by a proper bandage.

While we are pursuing these steps, we are at the same time to open the body, if necessary, with cooling purgatives, in order to make some derivation from the vessels of the head; and the patient is carefully to avoid all those circumstances, which might either determine the blood to the head, or prevent its free return from it.

Refrigerants, such as the saline medicine, with nitre, may be advised every hour or so, the patient drinking cold acidulated liquors, and exposing himself freely to cool air.

Vel,	*Or,*
4. ℞ Acid. Sulph. Dilut. f. ʒiss—f. ʒij.	4. Take Diluted Sulphuric Acid, a drachm and a half, or two drachms.
Aq. Puræ, f. ʒijss. M.	Pure Water, two ounces and a half. Mix them.

Astringents, such as the sulphate of zinc, alum, and plumbi acetas, with opium, are sometimes given internally: but their effect seems doubtful, as they seldom have time to act. When the complaint is of long duration, they may be used as below.* Alum, catechu, and gum kino, are astringents more applicable for hæmorrhages from the lungs, stomach, and intestines, than for epistaxis.

In this hæmorrhage, as well as in all other active ones, the tincture of digitalis, given in doses of thirty drops from a two-ounce phial (the size will make some difference in the drops) every six hours for four or five doses, may prove an efficacious remedy, particularly in full robust habits, or where there is a quickened circulation.

In obstinate cases, the application of a blister to the neck has occasionally produced a good effect.

After the bleeding has ceased, the patient must be careful not to remove the tents or clotted blood, but should allow them to come away of themselves; and in order to avoid any return of the hæmorrhage, he must be kept as still and quiet as possible, taking care not to apply any thing of a stimulating nature to the nose.

It sometimes happens, that when the bleeding is stopped outwardly, it nevertheless continues inwardly, and prevails in so high a degree as to threaten suffocation, particularly when the person

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* 5. ℞ Infus. Rosæ Comp. f. ℥vj.

Potassæ Nitrat. ʒj. M.
ft. Mistura, cujus sumat cochl. larg. iij. tertia quaq. hora.

Vel,

6. ℞ Acid. Sulph. Dilut. ♏ xvi.

Aq. Font. f. ℥jss.
Syrup. Rosæ. f. ʒij.
Tinct. Opii, ♏ x. M.
Pro haustu, ter quaterve in die sumendo.

Vel,

7. ℞ Zinc. Sulphat. gr. ¼—½.

Aluminis, gr. x.
Infus. Rosæ Compos. f. ℥jss.

Syrup. Rosæ. f. ʒj. M.
ft. Haustus, 6tis horis adhibendus.

Vel,

8. ℞ Aq. Distillat. f. ℥jss.

Plumbi Acet. gr. j.—ij.

Tinct. Opii, ♏ x.—xij.

Syrup. Rosæ, f. ʒj. M.
ft. Haustus, sexta quaque hora capiendus.

* 5. Take Compound Infusion of Roses, six ounces.
Nitrate of Potass, one drachm.
Shake them together, and of this mixture take three large spoonsful every third hour.

Or,

6. Take Diluted Sulphuric Acid, twenty-four drops.
Pure Water, one ounce and a half.
Syrup of Roses, two drachms.
Tincture of Opium, fifteen drops,
Mix them for a draught, to be taken three or four times a day.

Or,

7. Take Sulphate or Zinc, one quarter or half a grain.
Alum, ten grains.
Infusion of Roses, one ounce and a half.
Syrup of the same, one drachm.
Mix them for a draught, to be administered every six hours.

Or,

8. Take Distilled Water, one ounce and a half.
Acetate of Lead, from one to two grains.
Tincture of Opium, fifteen to twenty drops.
Syrup of Roses, one drachm.
This draught may be taken every six hours.

falls asleep. In such cases the passage may be stopped by introducing a pliable probe up the nostril, through the eye of which some strong threads have been passed, and so bringing it out at the mouth, then fastening pieces of sponge to their extremities, afterwards drawing them back, and tying them on the outside with a sufficient degree of tightness.

Where epistaxis arises in adults of a full plethoric habit, a frequent use of cooling purgatives, and an antiphlogistic regimen, may probably prevent any return of the complaint. When occasioned by too great a determination of blood to the head, topical bleeding, by means of leeches to the temples, will be advisable.

When it is occasioned by the suppression of some accustomed evacuation, such as the menstrual or hæmorrhoidal flux, this is to be restored if possible; but if we do not succeed, some other discharge, by means either of an issue or seton, must be substituted.

HÆMOPTYSIS, OR SPITTING OF BLOOD.

In hæmoptysis there is a discharge of blood of a florid colour, and often frothy, from the mouth, brought up with more or less of coughing or hawking, and preceded usually by a saltish taste in the saliva, a sense of weight about the præcordia, difficult respiration, and a pain in some part of the thorax.

It is readily to be distinguished from hæmatemesis, as in this last the blood is usually thrown up in considerable quantities; is moreover of a darker colour, more grumous, and mixed with the other contents of the stomach, and is unattended by any cough; whereas blood proceeding from the lungs is usually in small quantity; is of a florid colour, fluid, mixed with a little frothy mucus, and brought up by coughing.

A spitting of blood arises most usually between the ages of sixteen and twenty-five, and may be occasioned by any violent exertion, either in running, jumping, wrestling, singing, speaking loud, or blowing wind instruments, as likewise by wounds, plethora, pneumonia, weak vessels, hectic fever, coughs, irregular living, excessive drinking, or the suppression of some accustomed discharge, such as the menstrual or hæmorrhoidal. It may likewise be occasioned by breathing air which is too much rarefied to be able properly to expand the lungs.

Persons in whom there is a faulty proportion either in the vessels of the lungs, or in the capacity of the chest, being distinguished by a narrow thorax and prominent shoulders, or who are of a delicate make and sanguine temperament, or who have had previous affections of the same disease, seem much predisposed to this hæmorrhage: but in these the complaint is often brought on by the concurrence of the various occasional and exciting causes before mentioned.

A spitting of blood is not however always to be considered as a primary disease. It is often only a symptom; and in some disorders, such as pleurisies, peripneumonies, and many fevers, often arises: and is the presage of a favourable termination, if only very slight.

Sometimes it is preceded (as has already been observed) by a sense of weight and oppression at the chest, a dry tickling cough, some slight difficulty of breathing, and a hard jerking pulse. At other times it is ushered in with shiverings, coldness of the extremities, pains in the back and loins, flatulency, costiveness, and lassitude. The blood which is spit up is sometimes thin, and of a florid red colour; and at other times it is thick, and of a dark or blackish cast: nothing, however, can be inferred from this circumstance, but that the blood has lain a longer or shorter time in the chest before it was discharged.

An hæmoptoe is not usually attended with danger, where no symptoms of phthisis pulmonalis have preceded or accompanied the hæmorrhage; where it leaves behind no cough, dyspnœa, or other affection of the lungs; or where there is no malconformation of the pulmonary system: nor is it dangerous in a strong healthy person of a sound constitution, unless the hæmorrhage is very great; but when it attacks persons of a weak lax fibre and delicate habit, it may be difficult to remove.

It seldom takes place to such a degree as to prove fatal at once; but when it does, the effusion is from some large vessel. The danger, therefore, will be in proportion as the discharge of blood comes from a large vessel or a small one, and as the quantity is profuse or trifling.

When the disease proves fatal in consequence of the rupture of some large vessel, there is found, on dissection, a considerable quantity of clotted blood between the lungs and pleura, and there is usually more or less of an inflammatory appearance at the ruptured part. Where the disease terminates in pulmonary consumption, the same morbid appearances are to be met with as described under that particular head.

In an hæmoptoe, the effusion is to be moderated by a strict observance of the antiphlogistic plan; by carefully avoiding heat, and every kind of bodily exertion, and where the hæmorrhage is severe, even speaking; by employing occasionally cooling purgatives,* such as manna, tamarinds, phosphorated soda, sulphate of potass, &c.; and by making use of a light vegetable diet, with

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* 2. ℞ Infus. Rosæ Compos. f. ℥iss.
Magnes. Sulphat. ℥ij. M.
ft. Haustus, bis in die adhibendus.

* 1. Take Compound Infusion of Roses, one ounce and a half.
Sulphate of Magnesia, three drachms.
Mix them, and take this draught twice in the day.

ice and other refrigerants.* Cold acidulated liquors should be taken for ordinary drink. Dr. Darwin is of opinion, that one immersion in cold water, or a sudden sprinkling all over with it, might probably stop a pulmonary hæmorrhage. Indeed, the application of cold to the genitals, or immersing the feet, and even the lower part of the body, ought in no case of hæmoptysis to be neglected.

If the patient is hot and feverish, youthful, or of a plethoric habit, and has a hard jerking pulse, bleeding from the arm may be used with advantage, and the operation be repeated according to circumstances; but on the contrary, where there are marks of debility and laxity, and the blood is of a dark colour, depletion will be improper.

In all cases where the hæmorrhage is considerable, besides resorting to cooling purgatives and refrigerant medicines in the manner before mentioned, we ought to give astringents,† in order to stop it as quickly as possible; and if we find mild ones to fail, we must then employ others of a more powerful nature,‡taking care to exhibit some laxative, such as the oleum ricini, now and then, to prevent their having any deleterious effect.

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* 2. ℞ Infus. Rosæ Comp. f. ℥iss.

Potassæ Nitrat. gr. xv.
Tinct. Opii, ♏ x. M.
ft. Haustus, 4tis horis sumendus.

Vel,

3. ℞ Potassæ Supertart. ʒiij.

Potassæ Nitrat. ʒij. M.
ft. Pulv. capiat æger ʒss. pro dosi, ex cyatho parvo decocti hordei, vel aquæ frigidæ.

Vel,

4. ℞ Acid. Sulph. Dilut. ♏ xvj.

Aq. Fontan. f. ℥jss.
Tinct. Opii, ♏ xiij.
Syrup. Rosæ, ʒj. M.
ft. Haustus.

† 5. ℞ Aluminis, gr. viij.
Extract. Catechu, gr. x.
Confect. Rosæ, q. s. M.
ft. Bolus, 4ta quaq. hora sumendus, superbib. cochl. iij. magna Infusi Rosæ Comp.

Vel,

6. ℞ Tinct. Kino,
—— Catechu, āā f. ℥ss.

—— Opii, ʒij. M.
Capiat ♏ xx.—xxx. pro dos. ter quaterve in die.

‡ 7. ℞ Zinci Sulphat. gr. ss.—ij.

* 2. Take Compound Infusion of Roses, one ounce and a half.
Nitrate of Potass, fifteen grains.
Tincture of Opium, fifteen drops.
Mix them for a draught, to be taken every four hours.

Or,

3. Take Supertratrate of Potass, three drachms.
Nitrate of Potass, two drachms.
Mix them, and let the patient take half a drachm of the powder for a dose, dissolved in a teacupful of barley-water, or cold water.

Or,

4. Take Diluted Sulphuric Acid, twenty-four drops.
Pure Water, one ounce and a half.
Tincture of Opium, twenty drops.
Syrup of Roses, one drachm.
Mix them for a draught.

† 5. Take Powdered Alum, eight grains.
Catechu, ten grains.
Confection of Roses, a sufficiency to form a bolus, which may be taken every four hours, washing it down with three table-spoonsful of the Compound Infusion of Roses.

Or,

6. Take Tincture of Kino,
———— Catechu, of each half an ounce,
———— Opium, two drachms.
Mix them well, and take from thirty to forty-five drops for a dose, three or four times a day.

‡ 7. Take Sulphate of Zinc, from half a grain to two grains.

The acetate of lead has been used freely, and with great advantage, in hæmoptysis. One grain every four or six hours may be employed with perfect safety. In cases attended with imminent danger, we may venture on two, or even three grains. It may be given in an infusion of roses, with a few drops of tinctura opii in the form of a pill, if more agreeable.

The remarkable operation of digitalis in retarding the pulse has suggested its use in cases of active hæmorrhage, and particularly in hæmoptoe, in which disease it has been used by many practitioners, and repeatedly by myself, with a very happy effect. It may be given in small doses, repeated twice or thrice a day, as prescribed here.*

Gum. Kino, gr. viij.
Opii, gr. ss.
Confect. Rosæ, gr. x. M.
ft. Bolus, ter de die adhibendus.

Vel,

8. ℞ Cupri Sulphat. gr. v. solve in
Aq. Rosæ, f. ʒviij. et adde

Tinct. Opii, ♏ xl. M.
ft. Mistura, cujus sumat æger cochlear. larg. 4tis horis.

Vel,

9. ℞ Infus. Rosæ Compos. f. ℥jss.

Aluminis, gr. x.
Zinci Sulphat. gr. ½.
Tinct. Opii, ♏ x.
Syrup. Simpl. f, ʒj. M.
ft. Haustis, 4tis horis capiendus.

Vel,

10. ℞ Plumbi Acetat. gr. jss.—iij

Opii, gr. ss.
Confect. Rosæ q. s. M.
ft. Pilula, quarta vel sexta quaque hora sumenda.

* 11. ℞ Pulv. Digitalis Purp. gr. j.

Confect. Rosæ, gr. x. M.
ft. Bolus, mane, hora meridiana, et vespere sumendus.

Vel,

12. ℞ Infus. Digitalis, f. ʒvi.
Plumbi Acet. gr. ij.
Tinct. Opii, ♏ viij. M.
ft. Haustus, 6ta quaque hora adhibendus.

Vel,

14. ℞ Infus. Rosæ Comp. f. ℥jss.

Tinct. Digitalis, ♏ x.

——— Opii, ♏ xii. M.
ft. Haustus, 6tis horis capiendus.

Gum Kino, eight grains.
Opium, half a grain.
Confection of Roses, ten grains.
Make them into a bolus, to be given three times a day.

Or,

8. Take Sulphate of Copper, five grains.
Dissolve it in Rose Water, eight ounces, and add
Tincture of Opium, sixty drops.
Of this mixture let the patient take a large spoonful every four hours.

Or,

9. Take Compound Infusion of Roses, one ounce and a half.
Alum, ten grains.
Sulphate of Zinc, half a grain.
Tincture of Opium, fifteen drops.
Syrup, one drachm.
Mix them for a draught to be taken every four hours.

Or,

10. Take Acetate of Lead, one grain and a half to three grains.
Opium, half a grain.
Confection of Roses, a sufficiency to make them into a pill, which may be taken every fourth or sixth hour.

* 11. Take Powdered Purple Foxglove, one grain.
Confection of Roses, ten grains.
Form a bolus, to be taken morning, noon, and evening.

Or,

12. Take Infusion of Foxglove, six drachms.
Acetate of Lead, two grains.
Tincture of Opium, twelve drops.
Mix them for a draught to be taken every six hours.

Or,

13. Take Compound Infusion of Roses, one ounce and a half.
Tincture of Foxglove, fifteen drops.
——— Opium, eighteen Drops.
Mix them for a draught, to be taken every six hours.

As a powerful sedative, the prussic acid will be likely to prove highly advantageous in hæmoptoe, particularly if accompanied by a dry convulsive cough. For the mode of administering it, see Phthisis.

Should these remedies prove ineffectual in putting a stop to the hæmorrhage, we may make trial of Ruspini's styptic: but as it appears to possess very active powers, the full dose advised in the printed directions should not be continued after the bleeding stops. If its use is persevered in to prevent a return of the disease, the dose should be reduced to one-half, and be repeated at longer intervals.

If the hæmorrhage resists all the means which have been advised, and there is reason to fear that the patient may sink under the loss of blood, it will be proper to apply a blister to the chest; which remedy has often been attended with much advantage in cases of this nature.

Dr. Rush tells us, that a table-spoonful or two of common salt is often successful when other means will fail.

When much coughing attends on hæmoptoe, it will be necessary to have recourse to opium, exhibited in small and frequently repeated doses along with the other remedies.

Different preparations of the hyoscyamus have been successfully employed in hæmoptoe by the German physicians;* but being in the possession of so active a remedy as the digitalis for suppressing pulmonic hæmorrhage, by diminishing the action of the heart and arteries, it seems unnecessary to resort to this, except in those cases where we give it the preference to opium, with the view of tranquillizing the cough.

After the effusion is stopped, we are to use every possible means for preventing its return. If the complaint has arisen from predisposition, and where an inflammatory diathesis prevails, it may be necessary to obviate this by small bleedings, repeated according to the urgency of the symptoms; besides which, we may employ refrigerants and cooling purgatives occasionally, the patient at the same time adhering strictly to an antiphlogistic regimen, and avoiding all vigorous exertions of the body, agitations of the mind, and other occasional causes.

Sailing, travelling in an easy carriage, swinging, and riding gently on horseback, will be the most proper exercises.

Where the disease arises in persons of a lax fibre and delicate habit, it has been customary to exhibit the bark of cinchona and chalybeates. These seem, but more particularly the latter, to be unsafe medicines in all cases of active hæmorrhage, and have been experienced frequently to prove prejudicial in hæmoptoe, by increasing the phlogistic diathesis.

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* See Extracts from Hufeland's Journal, in vol. iii. p. 576, of the Medical and Physical Journal.

Whenever there is a fixed pain in the chest, a blister may be applied over the part with considerable advantage.

HÆMATEMESIS, OR VOMITING OF BLOOD.

A HÆMORRHAGE of blood from the stomach is readily to be distinguished from one which proceeds from the lungs, by its being usually preceded by a sense of weight, pain, or anxiety in the region of the stomach; by its being unaccompanied by any cough; by its being discharged in a very considerable quantity; by its being of a dark colour, and somewhat grumous; and by its being mixed with the other contents of the stomach.

The disease may be occasioned by any thing received into the stomach which stimulates it violently or wounds it; or may proceed from blows, bruises, or any other cause capable of exciting inflammation in this organ, or of determining too great a flow of blood to it: but it arises more usually as a symptom of some other disease (such as a suppression of the menstrual or hæmorrhoidal flux, or obstructions in the liver, spleen, and other viscera,) than as a primary affection.

Towards the close of scarlatina maligna, typhus gravior, and other disorders of a like nature, where symptoms of putrescency prevail in a high degree, a hæmorrhage from the stomach is very apt to arise.

Hæmatemesis is seldom so profuse as to destroy the patient suddenly; and the principal danger seems to arise, either from the great debility which repeated attacks of the complaint induce, or from the lodgment of blood in the intestines, which, by becoming putrid, might occasion some other disagreeable disorder.

The appearances to be observed on dissection, where it proves fatal, will depend on the disease of which it has been symptomatic.

Where this complaint has arisen in a plethoric habit, and is attended with febrile symptoms, or such as indicate an inflammatory diathesis, it may be necessary to take away a small quantity of blood from the arm; but the great debility which the disease produces of itself will not admit of this operation under any other circumstances.

In moderate attacks of the disorder it may be sufficient to make use of refrigerants, as advised under the head of Hæmoptysis, together with small doses of opium repeated twice or thrice a day, confining the patient at the same time to food of a light nutritive nature, and directing him to take some kind of cool acidulated beverage for his ordinary drink: but if these means do not quickly allay the hæmorrhage, we ought then to employ powerful astringents and sedatives, as advised under the last-mentioned disease. During the use of these medicines, it will be necessary, however, to give some gentle laxative (such as the oleum ricini) now and then, in order to obviate costiveness and prevent any deleterious effects.

In hæmatemesis I have the strongest reasons for presuming that there is not a more effectual astringent than the tinctura ferri muriatis; for by being applied here immediately to the mouth of the bleeding vessel, it acts as a styptic. It may be given in doses of twenty or thirty drops in a little cold water, and be repeated every hour or two, till the hæmorrhage ceases. Should it resist this medicine, we may make use of Ruspini's styptic.

It is said that large doses of spermaceti have been given in this disorder with success; but its use seems more likely to prove beneficial after the hæmorrhage has ceased than during its continuance, particularly where the effusion is considerable. If the practitioner is disposed to make a trial of it in mild cases, he can give it as below.*

The application of a blister to the abdomen in severe attacks is sometimes attended with a good effect.

When the hæmorrhage is stopped, it will be advisable to discover, if possible, the cause from which it proceeded, and by removing that or the primary disease, to prevent any return of the complaint.

Where hæmatemesis arises in putrid diseases, we must have recourse to the most powerful antiseptics.—See Typhus Gravior.—Where scirrhous tumours of the liver or spleen exist, and seem to have given rise to the hæmorrhage, we must resort to hydrargyrum, conium, and the other means advised in chronic hepatitis and splenitis.

A modern writer† informs us, that he has met with a variety of this disease in females from eighteen to thirty years of age, and by no means originating in organic affection of the stomach or viscera connected with it, that resisted the usual routine of treatment with cold acidulated liquors and different emmenagogues, but which readily gave way, by procuring copious and free alvine evacuation, by the exhibition of purgatives.

HÆMATURIA, OR VOIDING OF BLOOD BY URINE.

This disease is sometimes occasioned either by falls, blows, bruises, or some violent exertion, such as hard riding and jumping; but it often arises from a small stone lodged either in the kidney or ure-

† See Observations on the Utility of Purgative Medicines, by Dr. Hamilton, p. 109.

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* 1. ℞ Cetacei, ℈ss.
Vitel. Ovi, q. s. Terantur in mortar. marmoreo, et adde

Aq. Pulegii, f. ℥j.
— Fontan. f. ℥v.
Potassæ Nitrat. ℈j.
Tinct. Opii, ℥ xl.
ft. Mistura, cujus sumat cochl. larg. iii. 3tia vel 4ta quaq. hora.

* 1. Take Spermaceti, half an ounce.
Yolk of Egg, a sufficiency. Let them be mixed in a marble mortar, and then add

Pennyroyal Water, one ounce.
Pure Water, five ounces.
Nitrate of Potass, one drachm.
Tincture of Opium, sixty drops.

Of this mixture, let three large spoonsful be taken every three or four hours.

ter, which by its size or irregularity wounds the inner surface of the part it comes in contact with; in which case the blood discharged is most usually somewhat coagulated, and deposits a sediment of a dark brown colour, resembling the grounds of coffee. It is rarely, if ever, an idiopathic disease.

A discharge of blood by urine, when proceeding from the kidney or ureter, is commonly attended with an acute pain and sense of weight in the back, and some difficulty of making water, the urine which comes away first being muddy and high coloured, but towards the close of its flowing becomes transparent, and of a natural appearance. When the blood proceeds immediately from the bladder, it is usually accompanied with a sense of heat and pain at the bottom of the belly.

It is distinguished from the high coloured urine attendant on many diseases, by the deposit of a coagulum to the bottom of the vessel, and by its staining linen of a red colour.

The voiding of bloody urine is always attended with some danger, particularly when mixed with purulent matter. When it arises in the course of any malignant disease, it shows a highly putrid state of the blood, and always indicates a fatal termination.

The appearances to be observed on dissection will accord with those usually met with in the disease which has given rise to the complaint.

In the treatment of hæmaturia we must be guided by the cause which has occasioned it.

If it has arisen in consequence of some external injury, such as a blow or fall, or the patient is of a full plethoric habit, it may then be proper to make use of evacuation by bleeding, giving him a couple of table-spoonsful of an acidulated infusion of roses with a small quantity of nitre dissolved in it, every two or three hours; and employing some gentle purgative, such as the oleum ricini, magnesiæ sulphas, or sodæ sulphas, every second or third day, to keep the body open.

If the hæmorrhage should continue after these steps have been taken, we must resort to astringents, as noticed under the former heads, beginning with those of the milder kind. To allay irritation, we may also give opium in small doses every four or six hours. Where there is any deposit of a muco-purulent matter in the urine, about half a drachm of uva ursi in powder, three times a day, may be of service, the patient taking the double-acidulated soda-water for common drink.

When hæmaturia proceeds from a stone either in the kidney, ureter, or bladder, it is only to be cured by removing the cause; but as this may not be always practicable, we must then be contented to moderate the symptoms by making the patient drink plentifully of mucilaginous liquors, such as thick barley-water, solutions of gum. acaciæ, or a decoction of marshmallows, sweetened with honey; by giving him repeated small doses of opium, joined with refrigerants, as advised under the head of Hæmo-

ptysis, and by throwing emollient clysters frequently up the intestines.

A case of hæmaturia is recorded in the eighth volume of Medical Facts and Observations which had resisted repeated bleedings and warm bathing, saline purgatives, emetics of different kinds, camphor and opium in large doses, uva ursi, mephitic alkaline water, &c., and which was quickly and effectually removed by giving the patient a pint a day of a decoction of peach-leaves. This was prepared by boiling an ounce of dried leaves of the peach-tree (*Amygdala Persica*, Linn.) in a quart of water, till it was reduced to a pint and a half.

When hæmaturia is symptomatic of some malignant disease, as putrid fever, &c., powerful antiseptics must be administered.

MENORRHAGIA, OR IMMODERATE FLOW OF THE MENSES.

A FLOW of the menses is to be considered as immoderate when it either returns more frequently than what is natural, continues longer than ordinary, or is more abundant than is usual with the same person at other times. With the extraordinary flux of this secretion there are usually pains in the back and belly, somewhat like those of child-birth.

The usual period of its visitations is from twenty-seven to thirty days. As to the time of its continuance, this is various in different women; but it seldom continues longer than six days, or less than three, and does not cease suddenly, but in a gradual manner.—The quantity generally discharged, in a healthy and regular woman, is from four to six ounces at each visitation. Those of a lax and delicate constitution have, however, a more copious and longer continued discharge than persons of a robust habit: thus the full blooming country girl does not discharge half the quantity that the pale-faced lady of quality does.

The quantity of the menstruous fluid is greater in warm than in cold climates; so, if a woman lives in an atmosphere artificially warmed, much the same effect is produced. For practical purposes, it is of consequence to observe, that menstruation is a secretion, and not an effusion, of pure blood either from the arteries or veins. All blood from the sanguiferous vessels (with very few morbid exceptions) coagulates, whilst the fluid of the catamenia does not; whether it comes away in a dropping manner, or is retained in any considerable quantity, as in the case of imperforate hymen. For other observations on menstruation, see Amenorrhœa.

The causes of menorrhagia may be referred to,

1st, A plethoric state, or general fulness of habit.

2dly, Accidental circumstances determining the blood more copiously and forcibly into the uterine vessels; as violent exercise

in dancing, strokes or contusions on the belly, strains, and violent passions of the mind.

3dly, Irritations acting particularly on the uterus: as, great costiveness, obliging the person to much straining at stool; excess in venery, particularly during menstruation, or the application of wet and cold to the feet, which may determine a greater flow of blood than natural to the uterus.

4thly, Laxity and debility of the organ, arising from frequent child-bearing, difficult and tedious labours, or repeated miscarriages.

5thly, Those which induce debility of the whole system; as a sedentary and inactive life, indulging much in grief, and despondency, living upon a poor low diet, drinking freely of warm enervating liquors (such as tea and coffee), and living in very warm chambers; and,

6thly, Organic affections, such as scirrhus, polypus, ulceration, &c.

An immoderate flow of the menses arising from plethora is often preceded by headach, giddiness, or dyspnœa, and is afterwards attended with pains in the back and loins, some degree of thirst, universal heat, and a frequent, strong, hard pulse; but where it arises in consequence of a laxity of the organ, or of general debility, and such attacks are frequently repeated, the symptoms which attend are, paleness of visage, chilliness, laxity and flabbiness in the muscular fibres, unusual fatigue in exercise, a hurried respiration on the slightest effort, pains in the back on remaining any length of time in an erect posture, and coldness of the extremities, together with loss of appetite, indigestion, and a long train of nervous complaints.

If the disease has induced much debility by frequent and severe attacks, it is no uncommon occurrence for the feet to be affected with œdematous swelings, particularly towards the evening, and for a leuco-phlegmatic habit to take place.

In forming our prognostic in this disease, we must be directed by the nature of the cause which has given rise to it. If occasioned by a plethora, or a general fulness of the system, we need apprehend no danger, as a temporary debility will be the only inconvenience the woman will experience; but where it is produced by a laxity of the vessels of the organ, and is profuse, long continued, and of frequent occurrence, there will always be a risk of its inducing much general debility, and a leuco-phlegmatic habit. Leucorrhœa is a common consequence of it. Where it arises from an organic affection of the part, which is sometimes the case after the age of forty-five, it is usually deemed incurable.

When menorrhagia proves fatal in consequence of a scirrhus of the uterus, this organ is observed on dissection to be much increased in size, and its substance to be thick and hard; and when cut into, shows a firm structure intersected with membranous septa. The internal surface is at the same time usually ulcerated, and beset with ragged processes, and from these ulcerated parts the hæmorrhage proceeds.

If polypi are the organic affection, these on dissection are generally to be found adhering to some part near the neck of the womb, and they are surrounded with varicose vessels, which throw out the blood in considerable quantity when a rupture of any of them happens to take place.

Where a profuse flow of the menses is attended with pains in the back, and the patient is of a full and robust habit, with pyrexial symptoms, it may be proper to draw off a few ounces of blood; but in other instances venesection may very safely be omitted.

In general it will be sufficient to employ the other antiphlogistic means, such as keeping the body gently open with laxative medicines that give but little stimulus;* administering refrigerants,† such as nitre; making use of a spare regimen; drinking freely of cool acidulated liquors, such as lemonade or tamarind beverage, and keeping the chamber of a moderate temperature, and the bed, or mattress (which will be more proper), lightly covered with clothes. Besides adopting these means, the patient is to avoid an erect posture, and all such things as might prove exciting causes.

By avoiding these, and moderating the first beginnings of the disease, it is probable that women might, in most cases, prevent that debility which repeated and severe attacks are apt to occasion.

When no symptoms denoting an increased action in the vessels

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* 1. ℞ Potassæ Tartrat. ℥ss.
Mannæ, Optim. ℥iij.
Aq. Fervent. ℥iij.
Tinct. Lav. C. ℥ss. M.

ft. Mistura, cujus sumat dimidium pro dos.

Vel.

2. ℞ Magnes. Sulphat. ℥ij.

Aq. Fervent. ℥vj.
Tinct. Sennæ C. ℥ss.

Syr. Rosæ, ℥ij. M.
Cochl. larg. iv. pro dos. sumenda.

† 3. ℞ Potassæ Subcarbonat. ℈j.

Succ. Limon. f. ℥ss.
Potassæ Nitratis, gr. xv.
Aq. Font. f. ℥i.
Syr. Simpl. f. ℥ij. M.
ft. Haustus, 3tia hora capiendus.

Vel,

4. ℞ Infus. Rosæ Compos. *f.* ℥iss.

Potassæ Nitrat. gr. x.
Adde, pro re nata,
Tinct. Opii, ♏ x. M.
ft. Haustus, 4tis horis repetendus.

* 1. Take Tartrate of Potass, half an ounce.
Manna, three drachms.
Warm Water, three ounces.
Compound Tincture of Lavender, half a drachm.
Shake them, and of this mixture take the half for a dose.

Or,

2. Take Sulphate of Magnesia, two ounces.
Warm Water, six ounces.
Compound Tincture of Senna, half an ounce.
Syrup of Roses, two drachms.
Of this mixture let four table-spoonsful be taken for a dose.

† 3. Take Subcarbonate of Potass, one scruple.
Lemon Juice, half an ounce.
Nitrate of Potass, 15 grains.
Pure Water, one ounce.
Common Syrup, two drachms.
Mix them, and take the draught every three hours.

Or,

4. Take Compound Infusion of Roses, one ounce and a half.
Nitrate of Potass, ten grains.
Adding, if necessary,
Tincture of Opium, fifteen drops.
Mix them, and repeat this draught every four hours.

of the uterus are present, and we suppose that the augmented secretion has arisen in consequence of a laxity of the vessels, besides keeping the woman in a recumbent posture, shunning much external heat, making use of refrigerants internally, and avoiding venery, costiveness, and the other remote causes, we should have recourse to sedatives and astringents, both of which may be used externally as well as internally. After these we should prescribe tonics and stimulants.

Linen cloths dipped in vinegar and cold water, and kept constantly applied to the back and private parts, have a powerful effect in many cases of uterine hæmorrhage. These means ought therefore always to be employed in those instances where menstruation is profuse.

Opium has been much used internally in menorrhagia; and where the patient experiences spasmodic pains in the uterus, it undoubtedly will prove a very valuable and useful medicine. On such occasions it may be given in small and frequently-repeated doses, combined either with refrigerants or astringents; but as opium possesses the power of greatly relaxing the system when used liberally, it ought not to be administered in cases of general debility, unless under the circumstances just mentioned.

Producing nausea by frequently-repeated doses of ipecacuanha, combined with opium, every two or three hours, (say three grains of the former with the fourth of a grain of the latter,) has in some cases of menorrhagia proved highly useful, the flooding having ceased the moment that nausea was induced.

The astringents most employed in this disease are, alum, catechu, gum kino, and Armenian bole, which may be given as advised below,* or as prescribed under the heads of Hæmoptysis and Abortions. The sulphate of zinc, and acetate of lead, may be substituted in cases of profuse hæmorrhage.—(See

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* 5. ℞ Aluminis, gr. xij.
Gum. Kino, gr. viij.
Confect. Rosæ, q. s. M.
ft. Bolus, 3tia vel 4ta hora sumendus.

Adde, pro re nata,
Opii, gr. ss.
Vel,
6. ℞ Extract. Catechu, gr. xij.
Alumnis Purif. gr. x.
Confect. Rosæ, q. s. M.
ft. Bolus.
Vel,
7. ℞ Decoct. Cinchon. f. ℥iss.

Aluminis, gr. xij.
Tinct. Kino, f. ℥j.
——— Opii, ♏ x. M.
ft. Haustus, 4tis horis sumendus.

* 5. Take Alum, twelve grains.
Gum Kino, eight grains.
Confection of Roses, a sufficiency to form a bolus, which is to be taken every third or fourth hour.
Occasionally add
Opium, half a grain.
Or,
6. Take Extract of Catechu, 12 grains.
Alum Purified, ten grains.
Confection of Roses, a sufficiency to form these into a bolus.
Or,
7. Take Decoction of Peruvian Bark, one ounce and a half.
Alum, twelve grains.
Tincture of Kino, one drachm.
——— Opium, fifteen drops.
Mix them, and take the draught, every four hours.

Hæmoptysis.) We may give the latter in doses of one, two, or even three grains, every three or four hours, according to the urgency of the symptoms.

In those cases where the hæmorrhage is profuse, and resists the means already recommended, it will be proper to throw up astringent injections into the uterus from time to time. Any of those here* prescribed may be used on the occasion.

Where symptoms denoting an increased action in the vessels of the uterus are observable, it would probably be right to give the digitalis, as advised under the heads of Abortions and Hæmoptysis. In a few cases of this nature I have employed it with a good effect.

Where menorrhagia proceeds from a scirrhous or ulcerated state of the uterus, all that can be done is to afford a temporary relief by administering opium in considerable doses. A combination of it with the extract of hemlock might possibly add somewhat to its palliative effect. Hyoscyamus may likewise be tried.

In those cases where menstruation becomes profuse, continues longer than ordinary, or returns more frequently than what is natural, in consequence of general laxity in the system, and not from inflammatory action, it will be proper for the patient, during its intervals, to enter on a course of tonic medicines, such as cinchona, the cortex cuspariæ, myrrh, and preparations of steel, which may be given as advised below†, or under the head of Dyspepsia.

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* 8. ℞ Decoct. Cort. Querc. f. ℥vj.
Aluminis, ℥jss. M.
ft. Injectio.

Vel,

9. ℞ Zinc. Sulphat. gr. xv.
Plumbi Acet. ℥j.
Aq. Distillat. Oj. M.

Vel,

10. ℞ Aluminis, ℈iv.
Zinc. Sulphat. gr. x.
Aq. Rosæ, ℥viij. M.

Vel,

11. ℞ Infus. Gallæ Contus. Oj.
† 12. ℞ Gum. Myrrh. ℥j. solve in mortario cum
Aq. Distillat. ℥vj. et adde

—— Cinnam. f. ℥j.
Potassæ Subcarbonat. ℥ss.

Ferri Sulphat. ℈j.
Syrup. Simpl. f. ℥ij.
ft. Mistura, in Haustus iv. distribuenda, quorum j. sumat mane, hora quinta post meridiem, et hora decubitûs.

Vel,

13. ℞ Decoct. Cort. Cinchonæ, f. ℥jss.

* 8. Take Decoction of Oak Bark, 6 ounces.
Alum, one drachm and a half.
Mix them for an injection.

Or,

9. Take Sulphate of Zinc, fifteen grains.
Acetate of Lead, one drachm.
Distilled Water, one pint.
Mix them.

Or,

10. Take Alum, four scruples.
Sulphate of Zinc, ten grains.
Rose Water, eight ounces.
Mix them.

Or,

11. Take Infusion of Oak Galls, one pint.
† 12. Take Gum Myrrh, one drachm.

Dissolve it in Distilled Water, six ounces, and add
Cinnamon Water, one ounce.
Subcarbonate of Potass, half a drachm.
Sulphate of Iron, one scruple.
Common Syrup, two drachms.
Mix them, and divide the whole into four draughts, of which take one every morning, at five in the evening, and at bed-time.

Or,

13. Take Decoction of Peruvian Bark, one ounce and a half.

To assist the effect of these remedies, she may make use of cold bathing, together with gentle horse exercise, and a generous nutritive diet with wine. Where chalybeate springs can be resorted to with convenience, a use of these waters will be likely to afford much benefit.

When, from great weakness, and relaxation in the uterine parts, the patient is troubled with a profuse menorrhagia, or with fluor albus, she will often experience great relief from Tunbridge water, or any other such chalybeate springs; and as this state of local debility is very frequently a cause of abortion or barrenness, these waters have often been the means of removing such unpleasant circumstances.

With regard, however, to hæmorrhagy from the uterus, it is often accompanied with a degree of general fever, pains in the back and loins, and local irritation, when every internal stimulant medicine would aggravate the disorder; and therefore the use of chalybeate waters in these cases requires much judgment and a proper discrimination.

To repress the too great or permanent menstruation which occurs in weak constitutions at the time of life when it ought to cease, we should have recourse to chalybeates, alum, bitters, and opium; the last of which may be administered in the dose of a grain every night, with about five grains of rhubarb.

HÆMORRHOIS, OR PILES.

THE piles consist of small tumours situated on the verge of the anus, which are sometimes separate, round, and prominent, but sometimes the tumour consists only of one tumid or varicose ring surrounding it. In some cases there is a discharge of blood from these tumours, particularly when the patient goes to stool, and then the disease is known by the name of bleeding piles; and in others there is no discharge, when it is called blind piles.

These affections may be occasioned by habitual costiveness, plethora, hard riding, excesses of various kinds, the suppression of some long accustomed evacuation, and by a use of strong aloetic purges; and are most apt to arise in those of a robust habit, and who lead a sedentary life. Pregnant women are frequently afflicted with the piles, owing to the pressure of the uterus upon the rectum, which interrupts the return of venous blood from that part, and the costive habit to which such women are usually liable.

Tinct. Cort. Cuspariæ, —— Card. C. āā. f. ℥j. M.	Tincture of Angustura Bark, Compound Tincture of Cardamoms, of each one drachm.
℞. Haustus, ter in die capiendus. Adde, pro re nata, Acid. Sulph. Dilut. ℥ xviij.	Mix them for a draught, to be taken thrice a day, adding occasionally Diluted Sulphuric Acid, eighteen drops.

The piles are sometimes accompanied by a sense of weight in the back, loins, and bottom of the belly, together with a pain or giddiness in the head, sickness at the stomach, and flatulency in the bowels. On going to stool, a pungent pain is felt in the fundament, and small tumours are perceived to project beyond its verge. If these break, a quantity of blood is then voided, and a considerable relief from pain is obtained; but if they continue unbroken, the patient in that case experiences great torture every time he goes to stool, and feels an inconvenience even in sitting down on any hard seat. The tumours are sometimes considerable, and from pressure upon the bladder, produce much irritation and even pain in voiding urine.

Hæmorrhoids are by no means dangerous, but they often prove both troublesome and disagreeable. In some instances they are to be regarded as a salutary evacuation. Hæmorrhoidal tumours are sometimes attended with a considerable degree of inflammation, which, proceeding to a suppuration, terminates in sinuous ulcers, or a fistula.

Dissections of piles show that the tumours consist partly of the fine skin round the anus on the outside, and partly of the internal membrane of the gut. In general they are entire, but they sometimes have small openings in them through which the blood issues.

In the treatment of piles due attention should be paid to the cause from which they have arisen: and as costiveness is one of the most frequent, the bowels ought to be kept open and regular by medicines which will prove gently laxative*, without irritating the rectum; and as a habit may be acquired, it will be right for the patient to observe stated times in the day for endeavouring to obtain motions, but without straining. Should none be procured

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* 1. ℞ Confect. Sennæ, ℥ij.
Pulv. Jalap. ʒij.
Potassæ Nitrat. ʒjss.

Syr. Rhamni, q. s. M.
ft. Electuarium, de quo sumat magnitudinem juglandis pro re nata.

Vel,

2. ℞ Sulph. Loti, ʒj.
Confect. Sennæ, ℥ij.
Potassæ Supertart. ʒiij.

Syrup. Rosæ, q. s. M.
ft. Electuarium.

Vel,

3. ℞ Ol. Ricini, f. ʒvj.—ʒj.

Vel,

4. ℞ Pulv. Jalapæ, ℈j.
Potassæ Supertartrat. ʒij. M.

ft. Pulv. pro dos.

1. Take Confection of Senna, two ounces.
Powdered Jalap, two drachms.
Nitrate of Potass, one drachm and a half.
Syrup of Buckthorn, a sufficiency to form an electuary, of which take the bulk of a walnut occasionally.

Or,

2. Take Washed Sulphur, one ounce.
Confection of Senna, two ounces.
Supertartrate of Potass, three drachms.
Syrup of Roses, a sufficiency to make the whole into an electuary.

Or,

3. Take Castor Oil, six drachms to one ounce.

Or,

4. Take Powder Jalap, one scruple.
Supertartrate of Potass, two scruples.
This powder to be taken as a dose.

by the aid of the laxative medicines, the peristaltic motion may be excited by clysters of tepid water with soap and oil.

When the tumours are attended with much pain, and a considerable degree of inflammation, it may be advisable to apply a few leeches; after which, pledgets wetted in a solution of the acetate of lead, or sulphate of zinc, may be laid on; the patient taking care after each stool to anoint the parts with some kind of emollient ointment*. In these cases, fomentations and poultices are likewise employed; but the former are preferable, except in those cases where a suppuration has commenced. This, however, should be prevented if possible, as a fistula is sometimes the consequence thereof. Injections of cold water up the rectum have sometimes afforded great relief when even leeches and opiates have failed.

In a plethoric habit small doses of nitre may prove serviceable, particularly if mixed with sulphur. Balsam of Copaiba, given to the extent of forty or fifty drops morning and evening, often relieves the pains so frequently produced by piles.

Where the tumours are unattended by much inflammation, but are numerous and troublesome, compression is the most effectual remedy; and however large these bodies may project at stool or at other times, if the patient lies down on his back and makes a gradual but constant pressure with his fingers, they will almost always be reduced within the sphincter ani, and by a bandage properly secured with a small pad over the anus, may be prevented from prolapsing. If we cannot reduce the tumours, we must support them by a soft compress dipt in anodyne lotion, and retained by the bandage.

In a most violent case of external and internal hæmorrhoidal affection, which had resisted judicious treatment for five weeks, Dr. M'Lean mentions†, that almost immediate relief was obtained by giving the patient forty drops of the tinctura digitalis, and that a rapid recovery was effected by repeating thirty-five drops evening and morning. It is observed, that when he first applied for ad-

† See Medical and Physical Journal, vol. iv. p. 134.

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* 5. ℞ Unguent. Cetacei, ℥ij.
Opii, ℥j. M.

ft. Unguentum.

Vel,

6. ℞ Cerati Plumbi Acetatis, ℥ij.
Opii, ℥ij. M.

Vel,

7. ℞ Unguent. Cetacei,
——— Plumbi Acetatis, aā ℥ss.
Pulv. Opii, ℥ss. M.

* 5. Take Spermaceti Ointment, 2 ounces.
Opium, reduced to powder, one drachm.
Mix them well, and use the ointment.

Or,

6. Take Cerate of Acetate of Lead, two ounces.
Opium, two drachms.
Mix them.

Or,

7. Take Spermaceti Ointment,
Cerate of Acetate of Lead, of each half an ounce.
Opium in powder, half a drachm.
Mix them.

vice, his countenance was pale and sallow, his strength and flesh much exhausted, he walked with extreme pain and difficulty, his pulse was quick and small, and his appetite impaired: in a week the contrast was very striking.

If a prolapsus ani attends the piles, the part is carefully to be replaced each time after going to stool, by laying the patient in a horizontal posture, and pressing gently with the fingers till the reduction is effected. Its return is to be prevented by avoiding the occasional causes as much as possible; and where it proceeds from a laxity of the rectum, besides applying a proper bandage, we may employ astringents both internally, as advised under the heads of the preceding hæmorrhages, and also externally. Pledgets dipped in a strong decoction of galls, or oak bark, may be kept constantly to the parts as an external astringent, and they may be anointed from time to time with an ointment* possessing similar virtues. As a general tonic, cold bathing may be employed with advantage.

It has been noticed that hæmorrhoids are to be regarded in some instances as a salutary evacuation. In all such, therefore, the hæmorrhage should not be stopped, but moderated.

In those cases where it is so profuse as to occasion great loss of strength, we must have recourse to astringents both internally and externally, as has just been advised, taking care to obviate costiveness by some gentle laxative. Confinement to a horizontal posture with the most perfect quietude, will be advisable in such cases. If the patient can lie on his face, so much the better. He should be lodged in an airy chamber, and his bed be lightly covered.

When the hæmorrhage has been very considerable, good effects have been derived from the early application of pressure, made by introducing up the rectum a piece of sheep's or pig's gut tied at one end, and by filling it at the other extremity with any cold liquid, such as vinegar and water, forcing up the liquid so as to increase the degree of pressure, and then securing it with a proper bandage.

When the hæmorrhage proceeds from tumours seated high up, and is so severe as to induce great debility, we may throw up cold water in such a small quantity as just to fill the rectum, or some

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* ℞ Adipis Præparat. ℥j.
Pulv. Gallarum, ℥ij.
Opii, ℥j. M.
ft. Unguentum.
Vel,
℞ Cerat. Plumbi Acetatis, ℥j.
Pulv. Gallar. ℥ij. M.

* Take Prepared Lard, one ounce.
Oak Gall, in fine powder, two drachms.
Opium, one drachm:
Mix them.
Or,
Take Cerate of Acetate of Lead, one ounce.
Oak Gall, in powder, two drachms:
Mix them.

astringent injection,* if it cannot be moderated by the means just recommended.

In those cases where the discharge has become habitual, arising from plethora, this state of fulness must be prevented by moderate exercise on foot or in a carriage, by the use of a spare diet, by taking cooling purgatives from time to time, and by carefully avoiding all strong liquors.

An internal use of Harrowgate water is a remedy from which great benefit is derived in the piles. The advantages of sulphur, as a mild unirritating purgative, and one which seems to continue its operation through the whole of the intestinal tube, has long established its virtue in those hæmorrhoidal affections that require this evacuation; and the neutral salts, with which it is united in this mineral water, cannot but contribute to its efficacy.

Those who are afflicted with piles should shun all such causes as may either increase the determination of blood into the hæmorrhoidal vessels, or prevent its return back from them, but more particularly riding on horseback.

During the continuance of this complaint the diet should be cool and nutritious, consisting principally of vegetables, ripe fruit, jellies, broths, &c. Fermented and spirituous liquors will be hurtful, and therefore the patient should only drink cooling acidulated liquors, water, or toast and water.

Where piles have been of long standing, the intestinal varicose tumours or hæmorrhoidal excrescences sometimes become so troublesome as to render their extirpation necessary either by ligature or excision. Under certain and prudent limitations, the latter has been strongly recommended by Mr. Ware;† and by Sir James Earle‡ their removal has been powerfully urged; but very serious consequences have, however, now and then resulted from both modes. Their removal by the knife appears far preferable to doing it with ligatures, as peritoneal inflammation, convulsions, suppression of urine, and even tetanus, have ensued from the latter mode of treatment.

* See his Remarks on Fistula Lachrymalis, with Observations on Hæmorrhoids.

† See Observations on the Hæmorrhoidal Excrescence.—Pott's Works, by Sir James Earle, vol. iii.

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* 10. ℞ Cort. Querc. Contus. ℥j.
Aq. Fontan. Oij.
Coque ad Oj. Colaturæ adde
Aluminis, ℥ij.
Tinct. Opii, ℥. ℥j. M.
ft. Injectio.

Vel,

11. ℞ Zinc. Sulphat. ℥j.
Aq. Rosæ, Oj. M.

Vel,

℞ Gallæ Contus ℥ss.
Aq. Fervent. Oij. Col.

* 10. Take Decoction of Oak Bark, one pint.

Alum, two drachms.
Tincture of Opium, one drachm.
Mix them for an injection.

Or,

11. Take Sulphate of Zinc, one drachm.
Rose Water, one pint.
Mix them.

Or,

12. Take Bruised Oak Galls, half an ounce
Hot Water, two pints.
Infuse them, and strain off the liquor.

If the disease is recent, it may sometimes be relieved by milder means, such as the introduction of a large-sized bougie up the rectum. Where the radical operation is not thought advisable, or there may be any other objection to its performance, we ought to make trial of the bougie, as it has been found* very considerably to relieve strictures in the rectum and such like inconveniences produced by hæmorrhoidal excrescences.

When in consequence of piles, the rectum becomes so much affected as to threaten the patient with a fistula, we may recommend a use of Dr. Ward's celebrated paste†, as inserted in the Pharmacopœia Chirurgica, which is to be prepared in the following manner:—The first three ingredients are to be finely powdered and well mixed: after which, the honey and sugar melted together over the fire, and formed into a clear syrup, are to be added, and the whole beaten together into a mass.

ORDER V.

PROFLUVIA, OR FLUXES, WITH PYREXIA.

PYREXIA, with an increased excretion, not naturally bloody, constitutes this order of diseases.

CATARRHUS, OR CATARRH.

A CATARRH consists in an increased excretion of mucus from the membrane of the nose, throat, and bronchiæ, accompanied with a slight degree of fever, and other symptoms usually attendant thereon.

It attacks persons of all ages and constitutions, but more particularly the young, and those who have had any former affection of the lungs; and it may take place at any time of the year when there are sudden changes of the weather from heat to cold, and *vice versa*. In the former instance, the application of cold to the

* See Observations on the Diseases of the Rectum and Anus, by T. Copeland.

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† 13. ℞ Rad. Enul. Campan. Pulv.
Piperis Nigri singul. ℔ss.
Seminum Fœnicul. Pulv. ℔jss.
Mellis Dispumati,
Sacchar. Purificat. singul. ℔j. M.
℞. Pasta, de qua capiat quantitatem nucis moshatæ bis terve de die.

† 13. Take Elecampane Root, in powder,
Black Pepper, of each half a pound.
Fennel Seed, powdered, one pound and a half,
Clarified Honey,
White Sugar, of each one pound.
Make them into a paste, of which let the bulk of a nutmeg be taken twice or thrice daily.

body seems evidently to be the remote cause of the disease; and in the latter it appears to depend on a specific contagion, having, in the years 1732 and 1733, spread in a progressive manner over the whole of Europe, and part of America, and in 1785 and 1803, over the whole of Britain. When the disease has prevailed epidemically in this manner, the term of influenza has been applied to it.

The proximate or immediate cause of the catarrh, seems to be an increased afflux of fluids to the mucous membrane of the nose, fauces, and bronchia, in consequence of some degree of inflammation in these parts.

Catarrh is to be distinguished from the measles by the great mildness of the febrile symptoms, and by the absence of many of the symptoms accompanying the latter.

The disease usually comes on with a dull pain, or sense of weight in the forehead, a redness of the eyes, and a fulness and heat in the nostrils; which symptoms are soon followed by the distillation of a thin acrid fluid from these parts, together with a soreness in the trachea, hoarseness, frequent sneezing, some difficulty of breathing, a dry cough, loss of appetite, general lassitude over the whole body, and chilliness; towards evening the pulse becomes considerably quickened, and a slight degree of fever arises.

In the progress of the disorder the cough is attended with an excretion of mucus, which at first is thin, white, and expectorated with some difficulty; but becoming gradually thicker and of a yellow colour, is at length brought up with greater ease and less coughing.

Even where there is not much affection of the system, it often happens that the natural evening paroxysm is considerably increased; and, from restlessness and frequent coughing, the patient is prevented from sleeping till the morning, at which time a crisis takes place for the present, and he then remains tolerably easy until the return of the evening paroxysm.

When the secretion of mucus ceases, the inflammation goes off also, so that a natural cure almost always arises in the disease.

Catarrh is seldom attended with fatal consequences, except when it either arises in elderly persons, attacks those of a consumptive habit, or has been much aggravated by some fresh application of cold, or by improper treatment; and it usually terminates in the course of a few days, if not neglected, either by an increased expectoration, or a spontaneous sweat. In some instances it however lays the foundation of phthisis pulmonalis, or gives a tendency to asthma and hydrothorax. In others it becomes habitual, and is accompanied by severe dyspnœa, particularly in the winter: such patients often suffer fatally from the accession of a sharp frost; their usual complaint immediately attacks them, and passes on to the peripneumonia notha on the one hand, in which they are suffocated by the profuse effusion of

viscid phlegm into the air-cells and tubes; or, on the other, it puts on the more active form of common peripneumony. Very old persons are apt to be carried off by comparatively moderate attacks of catarrh, which seemed to wear out their feeble portion of vitality merely by the slight interruption to the function of respiration, which the phlegm secreted in the bronchial passages occasioned; and they quietly sink into the sleep of death, without any urgent symptom or appearance of distress.

The inner membrane of the trachea usually appears on dissection, in fatal cases of catarrh, to be much inflamed, and its cavity to be filled with a considerable quantity of mucous fluid. The same morbid state is likewise communicated to the lungs, which seem loaded with matter of a similar nature, producing suffocation.

In mild attacks of this disease it may not be necessary to have recourse to the aid of medicine. In general it will be sufficient to confine the patient to bed, and to make him use an abstemious regimen, and drink plentifully of warm diluent mucilaginous liquors, such as barley-water, thin gruel, &c., acidulated with a small quantity of lemon-juice, or crystals of tartar; but in violent attacks, where there is a great difficulty of breathing, much febrile heat, and a full, frequent pulse, it will be necessary, besides adopting these means, to guard against the effects of general inflammation, by employing various remedies.

In those cases, therefore, where there is much general affection of the system, and the inflammatory diathesis is great, we should have recourse to the lancet, and other antiphlogistic remedies, proportioning the quantity of blood which we draw off to the violence of the symptoms and the age of the patient.

If the difficulty of breathing and oppression at the chest are not soon relieved by venesection, local blood-letting will be advisable, after which it will be proper to apply a blister over the part affected; which application will seldom fail to afford relief, if employed early in the disease.

To encourage a determination to the surface of the body, and promote expectoration, it will be necessary to adminster small and frequently-repeated doses of antimonials, as advised under the head of Simple Continued Fever, or other diaphoretics, as prescribed below;* the effect of which may be assisted by making the patient

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* 1. ℞ Succ. Limon. f. ℥jss.
Ammon. Subcarbonat. ℥ss.
Aq. Fontan. f. ℥v.
Antimon. Tartarizat. gr. jss.
Syrup. Tolutan. f. ℥ss. M.
ft. Mistura, cujas sumat cochl. larg. ij. tertiis horis.

* 1. Take Juice of Lemon, one ounce and a half.
Subcarbonate of Ammonia, half a drachm.
Pure Water, five ounces.
Tartarized Antimony, one grain and a half.
Syrup of Tolu, half an ounce.
Of this mixture two large spoonsful are to be taken every three hours.

drink plentifully of mucilaginous diluent liquors acidulated, and confining him to bed.

Ammonia is a very powerful diaphoretic, and particularly if administered in wine-whey. Twenty or thirty drops of liquor vol. corn. cervi, in half a pint of wine-whey, if the patient is kept in a moderately warm bed, will soon elicit a profuse sweat. Neutral salts promote insensible perspiration, when the skin is not warmed much externally. When these are sufficiently diluted with water, and given, a copious perspiration is procured. Half an ounce of vinegar saturated with ammonia (as in the liquor ammon. acetatis) and taken every two or three hours, will answer this purpose very well.

Nitre is a medicine which is often given in this disease, as well as in gonorrhœa. In the latter, it will be sure to augment the pain by its stimulus on the excoriated or inflamed urethra; and in the former, where the discharge is too thin or saline, it cannot fail to increase the coughing.

The secretion of mucus in the lungs and fauces may likewise be assisted by administering pectorals of the attenuating class, such as squills, gum ammoniac, &c.* and by applying to them repeatedly, throughout the course of the day, the steams arising from warm vinegar and water, by means of Dr. Mudge's inhaler; the spout of a large teapot, or a funnel inverted over a basin.

When the cough is troublesome, and there is great soreness and rawness in the fauces, demulcents† may be used with advantage;

Vel,

2. ℞ Liquor. Ammon. Acetat. f. ℥ss.

Mistur. Camphoræ, f. ℥j.
Vini Antimon. Tartarizat. ♏ xii.

Syr. Althææ, ℥ij. M.

ft. Haustus, quartis horis adhibendus.

Vel.

3. ℞ Camphoræ, gr. iv.
Pulv. Antimon. gr. ij.
Confect. Rosæ, q. s. M.

ft. Bolus.

* 4. ℞ Misturæ Ammon. f. ℥vss. M.

Oxymel. Scillæ, f. ℥ss.

ft. Mistura, cujus sumat cochl. media ij. subindè vel tusse urgenti.

† 5. ℞ Mucilag. Gum. Acaciæ, f. ℥v.

Ol. Amygdal. D. f. ℥j.
Syrup. Tolutan. f. ℥ss.
Liquor. Ammon. Subcarbonat. f. ℥ss. M.

ft. Emulsio, cujus sæpe sumat. cochl. larg. j.

Or,

2. Take Solution of Acetate of Ammonia, half an ounce.
Camphorated Mixture, one ounce.
Wine of Tartarized Antimony, eighteen drops.
Syrup of Marshmallow, two drachms.

Mix them as a draught, to be given every four hours.

Or,

3. Take Camphor, four grains.
Antimonial Powder, two grains.
Confection of Roses, a sufficiency to form a bolus, which may be taken as frequently as the former.

* 4. Take Mixture of Ammoniac, five ounces and a half.
Oxymel of Squill, half an ounce.

Of this mixture two desert spoonsful may be taken now and then, or when the cough is troublesome.

† 5. Take Mucilage of Gum Acacia, five ounces.
Oil of Sweet Almonds, one ounce.
Syrup of Tolu, half an ounce.
Solution of the Subcarbonate of Ammonia, half a drachm.

Mix them, and of this emulsion the patient may take a large spoonful frequently.

and after the inflammatory symptoms have abated, opiates will afford effectual relief, and may be joined with the former. Where the patient's rest is particularly disturbed in the night, an opiate* at bed-time will be highly necessary, but it should be combined always with some diaphoretic.

If costiveness prevails in the course of the disease, it ought to be removed by gentle laxatives.

When the mucous membrane of the nose is much affected, it may be smeared from time to time with a little tallow, or spermaceti ointment.

The diet of the patient should be cooling and spare, as water-gruel, chicken-broth, beef-tea, vegetables, &c.

Such is the treatment which should be adopted during the first stage of the disease; but it often happens that, after the inflammatory symptoms have subsided, a weakness remains, and there is an increased secretion from the lungs, which perhaps continues for many months, without the least appearance of purulence. In such cases, the patient is carefully to avoid all fresh exposures to cold, and he should defend himself by going warmly clothed.

Where the disease runs on for any length of time, or has become habitual, the patient should continue long in bed in the morning, so that the natural evening paroxysm of fever may be entirely carried off there, and he should go early to bed at night. He is likewise to abstain from wine, and all food which is hard of digestion; to breathe as pure open air as possible; and to use gentle

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Vel,

6. ℞ Cetacei, ʒiss.
Vitellum Ovi unius. Misceantur bene in mortario, et adde

Syrup. Tolutan. f. ℥ss.
Aq. Distillat.
—— Pulegii, āā f. ʒiij. M.

ft. Mistura, cujus capiat æger cochleare magnum frequenter.

Vel,

7. ℞ Mel. Optim.
Ol. Amygd. D. āā f. ʒij.

Sac. Limon. f. ʒj.
Syrup. Tolutan. f. ʒij. M.

ft. Linctus, de quo sæpe lambat æger.

8. ℞ Liquor. Ammon. Acetat. f. ʒiij.

Mucilag. Gum. Acaciæ, f. ʒj.

Syrup. Tolutan. f. ʒj.
Tinct. Opii, ℥ xxvi. M.

ft. Haustus, hora decubitûs sumendus.

Vel,

9. ℞ Pulv. Ipecac. Comp. gr. xij.

ft. Pulvis sudorificus.

Or,

6. Take Spermaceti, one drachm and a half.
The Yolk of an Egg. Mix them well together in a mortar, then add
Syrup of Tolu, half an ounce.
Distilled Water,
Pennyroyal Water, of each three ounces.

Shake them together, and let the patient take a large spoonful frequently.

Or,

7. Take Clarified Honey,
Oil of Sweet Almonds, of each two ounces.
Lemon Juice, one ounce.
Syrup of Tolu, two drachms.

Mix them, and of this linctus let the patient take a little often.

* 8. Take Solution of Acetate of Ammonia, three drachms.
Mucilage of Gum Acacia, one ounce.
Syrup of Tolu, one drachm.
Tincture of Opium, forty drops.

Mix them for a draught, to be taken on going to bed.

Or.

9. Take Compound Powder of Ipecacuanha, twelve grains.

exercise daily on horseback: which will take off the blood from the interior parts, and thereby diminish the internal secretions.

Much benefit has been derived in some cases of chronic catarrh by using a warm bath, but particularly the vapour-bath, as by the latter we have the power of introducing into the chest soothing or stimulant vapours, which act immediately on the seat of the disease. When the secretion from the chest is greatly lessened, and debility alone remains, we may alternate the vapour-bath with the cold one, using the latter twice a week, and the vapour-bath once.

By paying a proper attention to the means which have been advised, by keeping up a constant inflammation on the breast by plasters of Burgundy pitch, or pix abietina, and blisters, and by employing opiates to mitigate the cough, and tonics, we shall in general be able to remove all consequences of the disease.

If, notwithstanding these means, the cough should be dry, or be unattended with proper expectoration, and, together with a soreness, produce shooting pains through the breast and between the shoulders, accompanied with difficulty of breathing, flushing in the cheeks after meals, a burning sensation in the hands and feet, and other symptoms of hectic fever, no time should be lost, as there is reason to fear that tubercular suppurations will follow. Under such circumstances, the steps advised in the treatment of phthisis pulmonalis ought immediately to be adopted.

It is necessary here to notice a species of catarrh, with which persons advanced in life, and who have had frequent attacks of such affections, are apt to be afflicted. They are seized with a cough, which at length becomes habitual and chronic, and continues for many years, proving extremely distressing. Its attacks are most common early in the morning, and the ill-fated patient, otherwise in good health, is thrown into fits of coughing, which last a long time, and are only terminated by a free expectoration taking place, when relief is immediately obtained. Next morning, however, the same distressing symptoms again seize the enfeebled patient, and thus the little strength he may have to support him through the fatigues of the day is nearly exhausted. In northern climates in particular, this species of catarrhal affection is very frequently to be met with among elderly people; and it seems to arise from an unusual quantity of mucus secreted in the bronchiæ, and perhaps in the lungs themselves, which by impeding respiration, or mechanically irritating these parts, produces the cough. When the complaint is protracted, or occurs in aged people who are much exhausted, the expectoration possibly ceases, while at the same time the bronchial secretion goes on, the skin is cold, the pulse is small and fluttering, the patient becomes drowsy, the face is tumid and discoloured, the lips livid, and the breathing is more and more difficult, till at last the bronchiæ are so replete with mucus, that the admission of a sufficient quantity of air to support life becomes impossible, and suffocation ensues: as happened in a

late instance which came under my care. A combination* of squill and gum ammoniac will be proper in this species of catarrh. Tonics appear likewise advisable, and therefore we may recommend the sulphate of iron, with subcarbonate of potass and myrrh, as noticed under the head of Phthisis. Opium, by checking the expectoration, might prove prejudicial. Digitalis† will be very likely to produce much benefit also in chronic coughs accompanied with dyspnœa, great secretion of viscid phlegm, and any tendency to effusion into the cells of the lungs.

The catarrhal fever known by the name of influenza, which prevailed so universally in most parts of this kingdom in 1803, as well as in France, where it was called *la gripe*, first showed itself in London towards the latter end of the month of February, when a damp and mild state of the atmosphere had succeeded to severe cold, and when this again had been followed towards the beginning of March by frost and keen easterly winds.

Like preceding epidemics of the same kind, this disease exhibited various degrees of morbid affection, having been in some instances so slight as not to incapacitate persons from following their ordinary occupations and pursuits, and scarcely to require the aid of medicine; while in others the attack was of so severe a nature as to endanger life, and even to destroy it. To young children and elderly people it proved very fatal indeed, but more particularly so to the latter. Those likewise of a middle age, who either laboured under habitual asthma, or had any predisposition to phthisis, experienced its dire effect.

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* 10. ℞ Pulv. Gum. Myrrh. ʒj.
Gum. Ammoniac. ʒss.
Scillæ Pulv. gr. x.
Syrup. Tolutan. q. s. M.
Ft. Massa in pilulas gr. dividenda. Capiat ij. pro dos. omni mane et nocte.

Vel,

11. ℞ Gum. Myrrh. ʒss. Solve in
Aq. Puræ, ʒj. et adde
Mistur. Ammoniac. ʒv.
Oxymel. Scillæ, ʒss.
Tinct. Camphoræ Compos. ʒij. M.
Capiat cochl. amplum pro dos. bis terve in die.

† 12. ℞ Misturæ Ammoniac. f. ʒvss.
Oxymel. Scillæ, f. ʒss.
Tinct. Digitalis, ♏ xxv. M.
Sumat cochl. amplum subinde, vel tusse aut dyspnœa urgenti.

* Take Gum Myrrh in powder one drachm.
—— Ammoniac, half a drachm.
Powdered Squill, ten grains.
Syrup of Tolu, a sufficiency to form the mass, which is to be divided into pills of five grains each, and two to be taken morning and night.

Or,

11. Dissolve Myrrh, half a drachm in
Pure Water, one ounce; then add
Mixture of Ammoniac, five ounces.
Oxymel of Squill, half an ounce.
Compound Tincture of Camphor, two drachms.
Mix them, and take a large spoonful twice or thrice a day.

† 12. Take Mixture of Ammoniac, five ounces and a half.
Oxymel of Squill, half an ounce,
Tincture of Foxglove, forty drops.
Mix them, and let a large spoonful be taken from time to time, when either the cough or shortness of breath is troublesome.

It was generally preceded by chilliness and shiverings, which were succeeded by some degree of heat, pains in the head, a discharge from the eyes and nostrils, severe sneezing, hoarseness, and cough. In the course of a few hours the headach became much increased, as well as the heat; the pulse was quickened, but small; the breathing was difficult and oppressed, or transitory stitches across the chest were felt. Some patients complained of pains in the shoulders and limbs, very much resembling chronic rheumatism, and there were instances in which the difficulty of breathing might be, in part, attributed to a similar affection of the intercostal muscles. The tongue was usually white; the thirst considerable; the bowels were costive; the urine was high-coloured and clear; and very frequently there was nausea at the stomach, with more or less of vomiting.

Towards the second or third night the cough became greatly aggravated, and was strong and almost incessant, being usually accompanied, even on its first coming on, with an expectoration of thin sharp mucus. The evening paroxysm of fever was likewise more severe, being attended with extreme anxiety and restlessness, as well as considerable heat. and often with a great confusion in the head, and rambling. At this stage of the disease the pulse was usually from 100 to 120 strokes in a minute. Towards the morning there was commonly a remission of the febrile symptoms, but the cough continued urgent, and greatly interfered with the patient's getting any sleep after this time.

Where gentle perspirations came on early, and the bowels were kept open, the fever usually declined about the fifth or sixth day, and the urine, which before was high-coloured and clear, now became turbid, or deposited a copious sediment; but the cough continued for many days, the sputum being however of a milder quality and thicker consistence, and the expectoration more free. Depression of spirits, languor, and debility, which were universal attendants on this epidemic, together with restless nights, harassed the patients for a considerable length of time after the decline of the fever.

Such was the common form of the disease, but its modifications were extremely numerous; for in some instances there was a violent headach with a swelling of the eyes, or inflammation of the conjunctiva, or pains in the limbs, with but little catarrhal affection; in others, the throat was principally affected; and in others again, a peripneumonic condition existed. In a few instances the fever assumed the typhoid type.

In the treatment of the influenza, bleeding was not much employed, and it was only had recourse to in those cases where the symptoms of pneumonia were very urgent, and the patient complained of great difficulty of breathing or an acute pain in the side. Where dyspnœa prevailed, the application of a blister to the chest usually afforded considerable relief.

If nausea was complained of at the commencement, a gentle emetic proved serviceable; and where costiveness existed, as was usually the case, it was necessary to give some gentle laxative.

When there was no great degree of heat or fever present, it was by no means requisite to keep patients in bed: in such cases, confinement to their chamber, with plentiful dilution, and a spare regimen, were sufficient; but when the febrile symptoms ran high, it was necessary to keep them in bed, and to administer diaphoretics. Small doses of the pulvis antimonialis, assisted by a solution of some neutralized salt, and given every three or four hours, seldom failed to excite a gentle determination to the surface of the body. Further than this was not proper; for immoderate sweating, and particularly at the decline of the disease, was sure to prove injurious, by adding to the languor and debility.

Some advantages were derived from a free use of the compound decoction of barley, and solutions of gum. acaciæ, with the addition of a little syrup of lemons, in those cases where the fauces and throat were affected by rawness and soreness. Towards the decline of the disease, where the expectoration was both viscid and difficult, squills were employed with benefit. Where the cough proved very troublesome, and the febrile symptoms had subsided, an anodyne at night had a very good effect.

To counteract the languor and debility which invariably attended this epidemic, it was necessary, during a state of convalescence, to have recourse to tonics; such as a decoction of the bark of cinchona, with the mineral acids; or some preparation of myrrh, with an infusion either of calumba root or gentian, various formulæ of which are inserted under the head of Dyspepsia.

At the commencement of the disease, a spare, mild, and vegetable diet was most advisable; but at its decline, a generous one, with a moderate quantity of wine, was proper.

Many persons seemed to have relapses, and therefore it was found necessary to guard carefully against any fresh exposure to cold. In many instances the period of convalescence was much protracted; and during the debility which prevailed in consequence of it, patients were liable to the attack of some chronic disorder that proved obstinate and tedious, but more particularly to chronic rheumatism.

By some physicians the disease was supposed to be contagious; by others not so: indeed its wide and rapid spread made many suspect some more generally prevailing cause in the atmosphere, as alone capable of accounting for its extensive and speedy diffusion. It arose probably at first from a peculiar state of the atmosphere, like other epidemics, and was afterwards kept up and propagated by contagion.

DYSENTERIA, OR DYSENTERY.

The dysentery is a disease in which there is an inflammation of the mucous membrane of the intestines, accompanied with frequent stools, severe griping pains, tenesmus, and some degree of fever; the stools, although frequent, being small in quantity, and without any natural fæces intermixed, but consisting principally of mucus, which is sometimes streaked with blood. When the natural fæces do appear, they are usually under the form of small, compact, hard substances, known by the name of scybala.

In the medical schools of Europe, it has been taught that dysentery is of a highly contagious nature, and it undoubtedly is so where the sick are over-accumulated, and cleanliness and ventilation are not properly attended to; but it seems probable that the disease itself, under all ordinary circumstances of accommodation, is not of an infectious nature. It is reasonable to conclude that dysentery has rarely assumed an infectious character until it has prevailed for some time, and attacked a considerable number of persons: that is, not until the atmosphere has become charged with miasms emanating from the bodies of the sick, and their evacuations.

Dysentery occurs chiefly in the autumn, and is often occasioned by cold or moisture succeeding quickly to intense heat or great drought, whereby the perspiration is suddenly checked, and a determination made to the intestines. It is likewise occasioned by a use of unwholesome and putrid food, and by noxious exhalations and vapours: hence it appears often in armies encamped in the neighbourhood of low marshy grounds, spreads rapidly, and proves highly destructive, particularly where there is an undue accumulation of sick, and a neglect of cleanliness and due ventilation. From the same causes it occurs frequently on board ships of war, and vessels transporting slaves from the coast of Africa,—proving equally fatal. The free use of fruits has been assigned as one of the causes productive of the disease in warm climates; but very erroneously, for they have quite the opposite effect, and tend to preserve those from it who partake freely of them when perfectly ripe. A particular disposition in the atmosphere seems often to predispose or give rise to the dysentery, in which case it prevails epidemically.

It frequently occurs about the same time with autumnal intermittent and remittent fevers, and with these it is often complicated. It is likewise frequently combined with typhus. A late writer* supports the proposition that the simple dysentery is of itself never contagious, nor the intermittent and remittent forms of the disease; that the combination with typhus is alone possessed of that property; and this, he insists, originates not in the

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* See Observations on Simple Dysentery and its Combinations, by William Harty, M.D.

virus specific to the dysentery, but in the contagion of fever. Others have, however, given it as their opinion, that the contagion arises from the effluvia of the fæces of dysenteric patients, and not from their febrile perspiration or breath.

The dysentery is much more prevalent in warm climates than in cold ones; and in the months of August, September, and October, which is the rainy season of the year in the West Indies, it is apt to break out, and to become very general among the negroes on the different plantations in the colonies. It likewise prevails much in the unhealthy parts of the East Indies, and in our factories on the coast of Africa, both during the wet season and some time after it. The body having been rendered irritable by the great heat of the summer months, and being exposed suddenly to cold or moisture with open pores, the blood is thereby thrown from the exterior vessels upon the interior, so as to give rise to dysenteries.

The dysentery of tropical climates is usually found connected in some way or other with derangement of the liver; but whether the one is a cause or a consequence of the other, observation has not accurately determined; for sometimes hepatitis precedes the rise of Indian dysentery, at other times it follows in succession, and in some instances there are evident symptoms of both diseases existing from the commencement to the termination of the case.

Dysentery may readily be distinguished from diarrhœa by the absence of fever and tenesmus in the latter: the appearance of the stools, and the other symptoms, will further assist us.

An attack of dysentery is sometimes preceded by loss of appetite, costiveness, flatulency, sickness at the stomach, and a slight vomiting; and comes on with chills succeeded by heat in the skin, and frequency of the pulse. These symptoms are in general the forerunners of the griping and increased propensity to stool which afterwards occur; but it sometimes happens that the local affection is perceived first.

When the inflammation begins to occupy the lower part of the intestinal tube, the stools become more frequent and less abundant; and in passing through the inflamed parts they occasion great pain, so that every evacuation is preceded by a severe griping, as also a rumbling noise, and there is unusual flatulence in the bowels.

The motions vary both in colour and consistence, being sometimes composed of frothy mucus streaked with blood, and at other times of an acrid watery humour, like the washings of meat, and of a very fetid smell. Sometimes pure blood is voided; now and then lumps of coagulated mucus, resembling bits of cheese, are to be observed in the evacuations, and in some instances a quantity of purulent matter is passed.

Sometimes what is voided consists merely of mucous matter,

without any appearance of blood, exhibiting that disease which is known by the name of dysenteria alba, or morbus mucosus.

While the stools consist of these various matters, and are voided frequently, it is seldom that we can perceive any natural fæces among them, and when we do, they appear in small hard balls called scybala, which being passed, the patient is sure to experience some temporary relief from the griping and tenesmus.

It frequently happens, from the violent efforts which are made to discharge the irritating matters, that a portion of the gut is forced beyond the verge of the anus, which in the progress of the disease proves a troublesome and distressing symptom, as does likewise the tenesmus, there being a constant inclination to go to stool, without the ability of voiding any thing, except perhaps a little vitiated mucus, or a small quantity of blood.

More or less of pyrexia usually attends with the symptoms which have been described, throughout the whole course of the disease, where it is inclined to terminate fatally, and is either of an inflammatory or putrid tendency. In the other case the febrile state wholly disappears after a time, while the proper dysenteric symptoms probably will be of long continuance.

When the symptoms run high, and are accompanied with violent irritation of the whole intestinal tube, great prostration of strength, strangury, and hiccup, or with a putrid tendency, and fetid and involuntary discharges, the disease often terminates fatally in the course of a few days: but when they are more moderate, it is frequently protracted to a considerable length of time, and induces great emaciation and debility, but goes off at last by a gentle perspiration diffused over the whole body; the fever, thirst, and griping then ceasing, and the stools becoming of a natural colour and consistence. When the disease is of long standing, and has become habitual, it seldom admits of an easy cure; and when it attacks a person labouring under an advanced stage of scurvy or pulmonary consumption, or whose constitution has been much impaired by any other disorder, it is sure to prove fatal. It sometimes appears at the same time with autumnal intermittent and remittent fevers, as has before been observed, and is then more complicated and difficult to remove.

A great degree of tenesmus, severe griping pains, frequent inclination to go to stool and but little voided, much depression of strength, fetor of the evacuations, a tense abdomen, violent pyrexia, cold clammy sweats, coldness of the extremities, aphthæ, hiccup, petechiæ, and a weak irregular pulse, are to be regarded as very unfavourable symptoms. Whereas a gentle and universal diaphoresis, moderate pyrexia, the evacuations becoming less frequent and more of a natural consistence, and a gradual diminution of the griping and tenesmus, are favourable appearances. The disease is very liable to a relapse from any exposure to cold, wet, or fatigue.

Upon opening the bodies of those who die of dysentery, the internal coat of the intestines (but more particularly of the colon and rectum) appears to be affected with inflammation and its consequences, such as ulceration, erosions, contractions, scirrhosities, and gangrene. The peritonæum and other coverings of the abdomen, in many instances, have likewise an inflammatory appearance.

Two different stages seem evidently to exist in the course of this disease; wherefore, to treat it properly, due attention should be paid to that which is present at the time when advice is applied for. An important point to be attended to is, not to neglect it at its commencement.

In its first stage, if the patient is young and plethoric, and the disease is accompanied by acute inflammation of the villous coat of the intestines, and a considerable congestion of blood, or inflammation of the liver, as is sometimes the case in warm climates, early blood-letting may be requisite. It will also be proper, where an inflammatory state of the intestines appears to be the cause of dysentery, and besides the tormina and tenesmus, there is a considerable discharge of blood with the stools, which consist of little else than that and mucus; but otherwise venesection will not be necessary, particularly as the fever which accompanies dysentery is very apt in the course of the disease to assume a typhoid type.

It has been a matter of doubt with some physicians whether to consider the inflammation that attends on dysentery as the consequence or cause of the disease. My own opinion is certainly in favour of the latter; but nevertheless, I do not recommend an indiscriminate use of the lancet, but, on the contrary, a very cautious one.

In most cases, we may begin the cure by giving a gentle emetic in the evening, and the next morning we may administer castor oil or some saline purgative, which should be repeated every second or third day, in order to procure an evacuation of natural fæces, which seldom pass off in any quantity, unless by artificial means.

As a complete cure in dysentery can only be effected by a full and free discharge of purulent matter from the intestines, and this kept up throughout the whole period of the disease, a frequent repetition of such medicines as will effectually promote the end in view must be assiduously attended to.

Should those which are prescribed below* not procure copious

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* 1. ℞ Sodæ Sulphat. ℥vi.
Mannæ Optim. ℥ss.
Aq. Fervent. f. ℥iss.

Tinct. Sennæ C. ℥ij. M.

ft. Haustus.

Vel,

2. ℞ Ol. Ricini, f. ℥j. pro dos.

* 1. Take Sulphate of Soda, six drachms.
Manna, half an ounce.
Warm Water, one ounce and a half.
Compound Tincture of Senna, two drachms.
Mix them as a purgative draught.

Or,

2. Take Castor Oil, one ounce for a dose.

stools, we must then employ stronger purgatives.* Some practitioners are in the habit of combining emetic and purgative medicines, such as some of the mild neutral salts, with tartarized antimony † and often with a very good effect.

With the view of determining the circulation to the surface of the body, small doses of some diaphoretic‡ may be taken every three or four hours, after proper evacuations, so as to produce and keep up a gentle perspiration without exciting much nausea. A warm bath, assisted by diluents and warm covering, may prove good auxiliaries. By these means we may be able sometimes to cut the disease abruptly short, and arrest its progress.

Cerated glass of antimony has been much extolled by Sir John Pringle for its great efficacy in the cure of dysentery, and may therefore be given if the other medicines are not found to answer. The dose for an adult is about eight grains; but it will be most advisable to begin with four or five grains, increasing the quantity according to the effect produced.

A novel method of using emetic medicines in dysentery has been recommended by a late writer;‖ and we are assured by him, that he has found the practice highly successful. This in the form of a clyster; and that which he has experienced to answer best, has been about three drachms of ipecacuanha root, bruised and boiled in a quart of water down to a pint, which he repeats twice or thrice in twenty-four hours.

If dysentery is accompanied with violent retchings or a severe

‖ See Observations on the Nature and Cure of the Diseases of the East and West Indies, by Thomas Clarke, Surgeon.

Vel,

3. ℞ Magnes. Sulphat. ℥i.
Mannæ Optim. ʒss.
Aq. Fervent.
— Menth. Pip. āā f. ℥iiss.

Tinct. Rhei, f. ʒij. M.
Cujus sit dosis cochlearia quatuor pro re nata.

* 4. Hydrargyr. Submuriat. gr. iij.

Pulv. Jalapæ, ℈j.
Syr. Rhamni, q. s. M
ft. Mass. in pilulas v. pro dos. dividenda.

5. ℞ Infus. Sennæ. Compos. f. ℥v.

Potassæ Tartrat. ʒj.
Antimon. Tartar. gr. ij. Solv.
Hujus misturæ sumantur cochl. iv. quolibet trihorio, donec venter rite solutus erit.

6. ℞ Pulv. Ipecac. Comm. gr. iij.

Confect. Aromat. gr. x. M.
ft. Bolus, 4tis horis sumendus.

Or,

3. Take Sulphate of Magnesia, one ounce.
Manna, half an ounce.
Warm Water,
Peppermint Water, of each two ounces and a half.
Tincture of Rhubarb, two drachms.
Of this solution four large spoonsful may be taken occasionally.

* 4. Take Submuriate of Mercury, three grains.
Powdered Jalap, one scruple.
Syrup of Buckthorn, a sufficiency.
From the mass into five pills, to be taken for a dose.

† 5. Take Compound Infusion of Senna, five ounces.
Tartrate of Potass, one ounce.
Tartarized Antimony, two grains.
Dissolve them, and of this mixture four large spoonsful may be taken every three hours, until the bowels are sufficiently moved.

‡ 6. Take Compound Powder of Ipecacuanha, three grains.
Aromatic Confection, ten grains.
Make them into a bolus, to be taken every four hours.

vomiting on its attack, so as to threaten the patient with cholera morbus, neither emetics, purgatives, nor diaphoretics, will be advisable at first. In such cases, the stomach must be evacuated of its contents by the gentle stimulus of large draughts of chamomile tea. The same, or weak broth, may be thrown up the intestines in the form of clysters until these are cleansed; after which an opiate should immediately be given. If the opium is rejected, a double quantity of it is then to be administered in a clyster.

Should the vomiting continue very obstinate notwithstanding these means, the safety of the patient will then depend on bathing the region of the stomach well with tincture of opium and camphorated spirits; on repeating the clysters frequently with a proper quantity of opium in each; and on adopting the other steps advised under the head of Cholera Morbus. A blister applied over the stomach may sometimes be useful.

In dysentery, when the abdomen is hard, tense, and painful to the touch, and the gripings are frequent and severe, the application of flannels, wrung out in a warm decoction of chamomile flowers and poppy-heads, with a small addition of camphorated spirits, to the part, may afford considerable relief; but should fomentations not procure the desired effect, a blister ought to be put on. Most cases of dysentery, and particularly during the acute stages of the disease, may be relieved by immersing the patient in a warm bath of a moderate temperature, and keeping him in it for some time. Perhaps rubbing the abdomen with some warm and stimulating embrocation* on his being taken out of the bath, might increase its effect.

To defend the inner coat of the intestines from the acrimony of its contents, and to counteract the vain attempts at evacuation, it will be necessary to give something to be discharged. Here then we should not only administer mucilaginous substances, such as solutions of gum acacia in milk, preparations of barley, rice, arrow-root, &c.† by the mouth; but we should likewise inject a clyster of a similar nature‡ three or four times in the course of

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* 7. ℞ Liniment. Saponis, f. ℥iss.
Tinct. Opii, f. ℥ss.
Olei Rosmarin. f. ℥i. M.
ft. Embrocatio.

† 8. ℞ Gum. Acaciæ, ℥ij. Solv. in
Decoct. Hordei, Oij. et. adde
Syrup. Cort. Aurant. f. ℥ij.
Bibat æger pro potu ordinario.
Vel,
9. ℞ Misturæ Corn. Usti, Oj. in die.

‡ 10. ℞ Decoct. Amyli, f. ℥v.
Ol. Olivæ, f. ℥ss. M.
ft. Enema; adde pro re nata,
Tinct. Opii, f. ℥ss—℥i. M.

ft. Enema.

* 7. Take Soap Liniment, one ounce and a half.
Tincture of Opium, half an ounce.
Oil of Rosemary, one drachm.
Mix them for an embrocation.

† 8. Take Gum Acacia, two ounces. Dissolve it in
Barley Water, two pints, and add
Syrup of Orange Peel, two ounces.
The patient may take this for ordinary drink.
Or,
9. Take Mixture of Burnt Hartshorn, one pint daily.

‡ 10. Take Decoction of starch, five ounces.
Olive Oil, half an ounce.
Add occasionally
Tincture of Opium, half a drachm to one drachm.
Mix them for a clyster.

the day. All vain attempts to go to stool, as also all violent strainings in evacuating the contents of the bowels, ought carefully to be avoided by the patient throughout the disease; for if obedience be paid to every seeming call of nature, the straining which ensues will be highly detrimental, as little or nothing, except mucus and blood, comes away in four out of five efforts.

If the fundament becomes inflamed or excoriated, the parts should be anointed with a little soft pomatum or prepared lard, after each evacuation.

In the cure of Indian dysentery, mercury is the remedy now much relied on, but it is to be employed in an early stage of the disease. The plan recommended is, to give the hydrargyri submurias in a considerable dose night and morning without interruption, accompanied by a mercurial friction of the abdomen until the mouth becomes sore. If diarrhœa ensues, this symptom is not to be interfered with, but rather encouraged by an occasional purgative of the sulphate of soda or rhubarb. I am much inclined to doubt, however, whether mercury so employed as to produce salivation will be found useful, or even innocent, in the cure of real dysentery. Indeed I should think it could not fail in many instances to prove hurtful, and particularly in the doses which are mentioned. When given, it probably might be found best to combine it with ipecacuanha, as, for instance, half a grain of calomel with one of ipecacuanha every two hours, until the gums are affected, or we may administer it combined with antimonial powder and opium.

In the inflammatory variety of dysentery, the necessity of previous bleeding and purging to the employment of mercury, with the view of producing ptyalism, must be obvious to every practitioner.

Where there exists a disease of the liver, or any diseased action of the biliary system in dysentery, mercury has certainly been found highly useful; and it is from its singular utility in this combination of disease, that the practice has become in warm climates so general of treating it, in all its stages, by this remedy; a treatment, however, which must in many cases be improper. The connexion between dysentery and the deranged functions of the skin and liver has been illustrated by Dr. Johnson, who is an advocate for considerable doses of hydrargyri submurias, combined with small portions of opium. We are also told by a modern writer* that a proper combination of these two medicines has a surprising effect in restoring the natural balance of the vascular system, and in promoting the free secretion of bile. He says, that when it fails in acting forcibly on the skin in dysentery, small doses of the pulvis antimonialis and camphor may perhaps be added with advantage, the warm bath being occasionally used at the same time to equalize the circulation.

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* See Practical Illustrations of Typhus and other Febrile Diseases, by J. Armstrong, M.D.

There are some grounds for presuming that the disease which the authors here quoted* have called the dysentery of India, is in its nature, symptoms, and causes, and likewise in its method of treatment, very different from that which is described under this name in other countries; that it differs in nothing from the bilious fluxes so commonly to be met with there, and arises from an affection of the liver; for they describe the stools as being copious and liquid, frequently bilious, and seldom or never as containing scybala —symptoms by no means characteristic of true dysentery.

The singularity in the appearance of the fæces (as seldom passing by the anus in the form of scybala, but, whether by the action of medicine or otherwise, being generally loose and liquid) has not passed by unobserved by Sir James Macgregor, Mr. Banfield,† and others; and it has been conjectured that this peculiarity in tropical dysenteries arises probably from the intestinal secretions being considerably increased in consequence of climate, the secretions in such temperatures being more thin and acrid than in the climates of Europe, and hence scybala are easily broken down and amalgamated with the more fluid matter in their passage along the intestinal canal to the rectum.

In the secondary attacks of Indian dysentery, where the relaxed and weakened state of the bowels seemed to keep up the disease, the nitric acid, in the quantity of about two drachms in the day, in barley-water, has proved a useful adjunct in the cure, and has been found to diffuse an agreeable sensation of warmth through the whole line of the alimentary canal. On leaving off the use of this medicine, an infusion of quassia, calumba, or cascarilla, may be administered till the stomach and bowels have recovered their vigour and proper tone.

At the commencement of dysentery it would be improper to employ either opiates or astringents; but in the second stage, where the patient's strength is exhausted by frequent returns of the complaint, proceeding rather from a weak relaxed state of the bowels than from any remains of malignancy, a use of these remedies will prove both proper and beneficial, taking care to obviate costiveness, and evacuate the contents of the intestines from time to time, by administering a few grains of rhubarb, or some such gentle laxative.

In this stage of this disease, should the patient's rest be much disturbed throughout the course of the night from the frequency of the motions, we may direct an opiate‡ to be taken at bed-time

* See M'Gregor's Medical Sketches; Clarke on the Diseases of Warm Climates; Milne's Account of the Diseases that prevailed during two Voyages to the East Indies; and Essay on the Influence of Tropical Climates on European Constitutions, by J. Johnson, M.D.

† See his Practical Treatise on Tropical Dysentery.

‡ 11. ℞ Aq. Cinnam. f. ʒvi.
Spirit. Pimentæ. f. ℥ss,
Syrup. Zingib. f. ʒi.
Tinct. Opii, ♏ xxv. M.
ft. Haustus.

‡ 11. Take Cinnamon Water, six drachms,
Spirit of Pimento, half an ounce.
Syrup of Ginger, one drachm.
Tincture of Opium, forty drops.
Mix them as a draught.

The hyoscyamus (henbane,) by its anodyne and gentle laxative qualities, seems a medicine well adapted to this disease, and may be tried when we cannot venture on opium.

In chronic and habitual fluxes, which are complaints frequent with those who have suffered much sickness in tropical climates, it is seldom, indeed, that relief can be obtained without the aid of opium, and it is often found necessary to add it to all the other medicines we administer. Opiates, especially those of the warmer kind, such as the confectio opii, &c., are as valuable in these cases as the bark of cinchona is in intermittents.

When the bowels have been effectually relieved, it often happens, after the disease has continued for some time, from the tender state of the rectum, that a severe and troublesome tenesmus remains. Under such circumstances, or in the advanced stage of the disease, soothing and anodyne clysters are much used by professional men; but in some instances the irritation produced by introducing the pipe more than counterbalances the soothing effects of the injections. As a commodious substitute for anodyne clysters, we may therefore direct the patient to insinuate into the anus a pill of about two grains of opium, previously somewhat softened betwixt the fingers. We may also cause warm fomentations to be applied to the parts, and a bladder filled with hot water to the hypogastric region. These will be likely to afford great relief to the patient.

We are told that opium, combined with the nitric acid, agreeably to the prescription* here advised, has, on various trials, been found to have been attended with the best effects in the advanced stage of dysentery, when all other remedies have proved ineffectual, and even in cases where death seemed almost inevitable.†

The astringents best adapted for the cure of a dysentery, are the different preparations of catechu, gum kino, logwood, &c., which may be given as below,‡ the patient at the same time

† See Observations on the Effects of Nitric Acid and Opium in the Cure of Dysentery, in vol. iii. p. 413, of the Medical and Physical Journal.

Vel,

12. ℞ Opii, gr. j.—ij.
Pulv. Antim. gr. j.
Confect. Aromat. q. s. M.
ft. Pilula.

* 13 ℞ Acid. Nitrici Dilut. f. ʒij
Tinct. Opii, ♏ xxx.
Aq. Puræ, f. ℥iij. M.
Capiat cochleare minimum ter quarterve die in quovis vehiculo.

‡ 14. ℞ Extract. Ligu. Campech. ʒj.
Mist. Cretæ, f. ʒiv.
Tinct. Catechu, f. ʒij.
Spirit. Myristicæ, f. ℥j. M.
t. Mistura, cujus sumat cochl. larg. ij. quartis horis.

Or,

12. Take Opium, one grain to two grains.
Antimonial Powder, one grain.
Aromatic Confection, a sufficiency to form a pill.

* 13. Take Diluted Nitric Acid, two drachms.
Tincture of Opium, forty-five drops.
Pure Water, three ounces.
Mix them, and take about a tea-spoonful three or four times a day.

‡ 14. Take extract of Logwood, one drachm.
Chalk Mixture, four ounces.
Tincture of Catechu, two drachms.
Spirit of Nutmeg, one ounce.
Of this mixture take two table-spoonsful every four hours.

taking Port wine properly diluted with water for his ordinary drink. Lime-water mixed with an equal proportion of milk has been much recommended as a useful remedy in the latter stage of the disease. During my residence in the West Indies, I was in the habit of recommending a strong decoction of logwood with the barks of pomegranate-fruit and the cushew cherry-tree, or anacardium, as an astringent drink, from which my patients seldom failed to experience a good effect.

In the advanced and chronic state of the disease, as acidity at the stomach is apt to prevail, absorbents, such as the mistura cretæ, pulvis cretæ compositus, liquor calcis, &c., combined with opiates, will be useful.—See Dyspepsia for formulæ of these medicines.

Where there exists an extreme degree of atony, and a frequent discharge of fæces without pain, small doses of zinci sulphas combined with opium have proved of singular utility in many instances.

The impaired tone of the intestines is likewise to be restored by a use of tonics and bitters,* together with a light nutritive diet and moderate exercise. The application of cold water to the abdomen, and particularly to the lower parts of it, by means of cloths or sponges; or the immersion of the lower part of the trunk in a tub of water, may probably prove a good auxiliary means.

Vel,

15. ℞ Confect. Aromat. ℥j.

Aq. Cinnam. f. ℥v.
Spirit. Pimentæ, f. ℥j.
Tinct. Kino, f. ℥ij. M.

ft. Mistura. Adde pro re natâ singul. dosi,

Tinct. Opii, ♏ x.

Vel,

16. ℞ Confect. Opii, gr. x.
Aq. Cinnam. f. ℥jss.

Tinct. Catechu, f. ℥jss. M.

ft. Haustus, quartis horis sumendus.

Vel,

17. ℞ Elect. Catechu, gr. xv.

Aq. Pimentæ, f. ℥jss.

Tinct. Kino, f. ℥j.
——— Opii, ♏ x. M.

ft. Haustus.

* 18. ℞ Cort. Simaroubæ contus.
—— Cascaril. ää ℥ss. coque ex

Aq. Bullient. Oj. ad ℥viij. colat. adde

Spirit. Cinnam. f. ℥ij.
Tinct. Opii, ♏ xxx. M.

Or,

15. Take Aromatic Confection, one drachm.
Cinnamon Water, five ounces.
Spirit of Pimento, one ounce.
Tincture of Kino, two drachms.

This mixture may be taken as the former, adding occasionally to each dose,

Tincture of Opium, fifteen drops.

Or,

16. Take Opium Confection, ten grains.
Cinnamon Water, one ounce and a half.
Tincture of Catechu, one drachm and a half.

Mix them, and take this draught every four hours.

Or,

17. Take Electuary of Catechu, fifteen grains.
Pimento Water, one ounce and a half.
Tincture of Kino, one drachm.
——— Opium, fifteen drops.

Mix them for a draught.

* 18. Take Simarouba Bark, bruised, Cascarilla Bark, of each half an ounce.

Boil them in a pint of water until reduced to eight ounces, strain off the liquor, and add

Spirit of Cinnamon, two ounces
Tincture of Opium, forty-five drops.

The fever accompanying this disease sometimes appears under an intermittent or remittent form, and is protracted much longer than it otherwise would have been, in consequence of its being so complicated. In such cases, its treatment is to be regulated as directed under these heads, by a use of the bark of cinchona, &c.

In those instances where a dusky sallow hue of the countenance, tenderness upon pressure over the region of the liver, and a clayey appearance in the fæces which happen occasionally to be voided, manifest the presence of a diseased or obstructed state of the liver; we should resort to mercury, pushing it to such an extent as to keep up a gentle affection of the mouth until the symptoms are mitigated. We may give the nitric acid at the same time.

In the first stage of dysentery, a use of ripe fruits will be proper; but in a more advanced period, where any morbid acidity seems to prevail in the stomach, they should not be recommended.

Every sort of food which readily tends to putrefaction ought carefully to be avoided throughout the whole course of the disorder, as also all kinds of fermented and spirituous liquors; supporting the patient's strength with preparations of barley, rice, sago, flour, panado, Indian arrow-root boiled in milk, occasionally varied for gelatinous broths. During the state of convalescence, Port wine or Madeira, or even a moderate quantity of brandy, properly diluted with water, may be allowed.

Capiat cochl. iij. quarta quaque hora.

Vel,

19. ℞ Infus. Cort. Cuspariæ, f. ℥vj.

Tinct. Calumbæ, f. ℥j.
——— Catechu, f. ʒij.
Acid. Nitric. Dilut. f. ʒi. M.
ft. Mistura, cujus sit dosis cochlearia magna iij. ter in die.

Vel,

20. ℞ Decoct. Cort. Cinchonæ, f. ℥jss.

Tinct. Calumb.
——— Aurant. āā f. ʒjss.

——— Kino, ♏ xxv. M.
ft. Haustus, ter quaterve die sumendus.

Vel,

21. ℞ Extract. Gentian.
——— Lign. Camp. āā ʒj.

Ferri Sulphatis,
Gum. Myrrh. āā ʒss.

Syrup. Zingib. q. s. M.
Fiant pilulæ xl. quarum iij. sumat ter in die cum Decoct. Simaroub. aut infusi Cascarillæ, f. ℥ij.

Mix them, and let the dose be three table-spoonsful every four hours.

Or,

19. Take Infusion of Angustura Bark, six ounces.
Tincture of Calumba, one ounce.
——— Catechu, two drachms.
Diluted Nitric Acid, one drachm.
Of this mixture, the dose may be three table-spoonsful thrice a day.

Or,

20. Take Decoction of Peruvian Bark, one ounce and a half.
Tincture of Calumba,
——— Orange Peel, of each one drachm and a half.
——— Kino, forty drops.
Mix them for a draught, to be taken three or four times a day.

Or,

21. Take Extract of Gentian,
——— Logwood, of each one drachm.
Sulphate of Iron,
Gum Myrrh, of each half a drachm.
Syrup of Ginger a sufficiency to form the mass, which is to be divided into forty pills, and of these three are to be taken morning, noon, and night, washing them down with about two ounces of a decoction of Simarouba Bark, or an infusion of Cascarilla.

Persons recovering from the dysentery should observe the greatest caution and regularity in their mode of living, and they should go warmly clothed by wearing flannel next the skin, as the disease is very liable to relapse from any fresh exposure to cold, wet, damp night air, or sudden atmospherical vicissitudes.

The importance of warm clothing, both in the prevention and cure of bowel complaints, is too obvious to require my saying much on the subject; I will therefore only observe, that warmth ought not to be a secondary object; on the contrary, it ought to be the first; for if a patient only wear his ordinary clothing, he will receive comparatively but little benefit from any medicine. A waistcoat of flannel or fleecy hosiery next to the skin ought always to be worn, as likewise sliders of the same; and these should be laid aside with caution, and by slow degrees. The writer* of a small tract on dysentery lays much stress on swathing the abdomen with flannel bandages, as being the best mode of confining a certain degree of heat over that part of the body which is the seat of the disease; and this practice is reported by Sir James M'Gregor† to have been found very serviceable in many cases, both as affording an equal support, and keeping up a due degree of warmth on the surface of the abdomen.

Dysentery being by most considered of a very contagious nature, every precaution should be taken, particularly in situations where many people are crowded together (as in camps, and on board of ships), to prevent the disease from spreading. The sick ought immediately to be separated from those in health, or who labour under any other disorder; they should be lodged, if possible, in distinct rooms or tents, and the strictest attention should be paid to cleanliness, taking care to remove the stools as soon as voided, and to have them quickly buried; to ventilate the chamber sufficiently, and sprinkle it now and then with a little warm vinegar; and to change the linen both of the body and beds frequently. In addition to these means, the fumigations advised under the head of Typhus Gravior may be resorted to.

For the destruction of contagion of every species, where a number of persons are collected together, Dr. Rollo,‡ in addition to free ventilation and cleanliness, recommends the following as being an easy, safe, and very effectual method, and which is pursued at the Royal Artillery Hospital.

Take of pulverized manganese, two parts; common salt, four parts; sulphuric acid, three parts; water, one part. A suitable proportion of this mixture is to be put into an earthen vessel, and suffered to remain until no vapours arise from it, or its peculiar smell is not perceptible. He mentions, that when a patient is admitted with an infectious disease, one or two gallipots are placed

* See H. Dewar's Observations on Diarrhœa and Dysentery, as those Diseases appeared in the British Army during the Campaign in Egypt in 1801.

† See Medico-Chirurgical Observations, vol. vi. p. 433.

‡ See his Account of the Royal Artillery Hospital at Woolwich.

in the wards with about three ounces of the manganese and salt, to which is added half an ounce of water, and then is gradually poured on the whole a part of the ounce of sulphuric acid, the remainder occasionally.

These quantities are according to the proportions previously stated, and they answer the consumption of a day. A pot or two is placed, we are informed by the Doctor, on the outside of the doors of the same wards in the gallery. The vapour is diffused over the whole ward, penetrates every where, and destroys every other smell than what itself conveys. Even the contagion of the small-pox has been noticed to be destroyed by this vapour, and of course it is likely to prove destructive of other contagions. In the manner here described, it can be used with due effect, and without the least prejudice to the sick.

Its application, besides annihilating contagion, may also prevent its formation: and its use is recommended by Dr. Rollo in all situations where a number of persons in health are confined together, as on board of transports, especially in bad weather. Two or three gallipots, with the quantities before mentioned, he says, would be sufficient, and it would not be necessary to use them oftener than twice or thrice a week.

It has been recommended to make trial of the remedy in marshy situations, where there may be an unavoidable exposure: in these places the gallipots with the materials should be placed in the inside of the windows and doors of the habitations next to the marshes.

CLASS II.

NEUROSES, OR NERVOUS DISEASES.

THE character assigned to this class of diseases is, preternatural affection of sense and motion, without idiopathic or primary pyrexia, and without local disease.

ORDER I.

COMATA.

DIMINUTION of voluntary motion, with sleep, or a suspension of sense, is the character of this order of diseases.

APOPLEXIA, OR APOPLEXY.

THIS disease consists in a sudden diminution or abolition of all the senses, external and internal, and of all voluntary motion,

while at the same time the heart and lungs continue to perform their action. The state of the pulse, difficult respiration, stertorous breathing, profound sleep, and the affection of all the powers of volition, will distinguish apoplexy from palsy: the stertor, sopor, diminution of the power of volition, and the absence of convulsions, will distinguish it from epilepsy. In general it may readily be distinguished from intoxication by the patient not being roused by shouting in his ear, by applying volatile spirits to his nostrils, nor by shaking or pinching him. His respiration is low, labouring, and irregular, his countenance flushed, the pupils of his eyes often contracted, and his breath not tainted with the smell of wine or spirituous liquors. The extreme of insensibility from intoxication is sometimes, however, with difficulty to be distinguished from apoplexy, but its duration seldom exceeds ten or twelve hours at the utmost.

Apoplexy makes its attack chiefly at an advanced period of life, and most usually on those who are of a corpulent habit, with a short neck and large head, and who lead an inactive life, make use of a full diet, or drink to excess. Young subjects are not, however, exempted from apoplexy, but it is very rare when compared with persons advanced into the vale of years.

The immediate cause of apoplexy is most generally a compression on the brain, produced either by an accumulation of blood in the vessels of the head, and distending them to such a degree as to compress the medullary portion of the brain; or by an effusion of blood from the red vessels, or of serum from the exhalants, which fluids are accumulated in such a quantity as to occasion compression; but it takes place sometimes without congestion, extravasation, exudation, or effusion in the head being the consequence, as in many instances we see patients recovering quickly from a fit of apoplexy without any paralytic affection being left behind, which could not happen if either of these had existed. Such cases have by some physicians been supposed to originate in a peculiar condition of the brain and nerves alone, unattended by any discoverable alteration in their anatomical structure. Possibly a particular condition of the stomach and local irritations will produce this state.

When the disease arises from an accumulation of blood in the vessels of the head, or by an effusion of blood from the red vessels, it is called sanguineous apoplexy, and when occasioned by serum from the exhalants, it is known by the name of serous apoplexy.

The states of over-distension and effusion may be brought on by whatever increases the afflux and impetus of the blood in the arteries of the head; such as violent fits of passion, mental anxiety, indolence, great exertions of muscular strength, severe exercise, excess in venery, gluttony, drunkenness, intense study, stooping down for any length of time, wearing any thing too tight about the neck, long exposure to intense cold or a vertical sun, the sudden suppression of any long-accustomed evacuation, the appli-

cation of the fumes of certain narcotic and metallic substances, such as opium, alcohol, charcoal, mephitic airs, mercury, &c.; and by blows, wounds, and other external injuries. In short, apoplexy may be occasioned by whatever fills, distends, obstructs, ruptures, lacerates, corrodes, or compresses the vessels of the brain and its meninges too much, and thereby urges, retards, or entirely impedes the flow of blood through the same; or in any manner destroys the intimate fabric and structure of the brain.

A loss of vitality in the brain has been assigned as a cause of apoplexy in those cases where neither extravasation, exudation, nor effusion, are to be discovered on dissection.

The circumstances disposing to sanguineous apoplexy are a full and luxurious mode of living, with but little exercise, a sanguine temperament, a full habit, middle age, short neck, suppressed evacuations, and warm weather. Those which dispose to serous apoplexy, are a phlegmatic temperament, cachectic habit of body, poor living, depressing passions of the mind, much study, watching, and old age.

Sanguineous apoplexy is sometimes preceded by giddiness, dimness of sight, drowsiness, loss of memory, or faltering of the tongue in speaking; but it more usually happens, that without much previous indisposition the person falls down suddenly, the face is red, and appears puffed up, the veins of the head, particularly of the eyes, temples, and neck, seem turgid, the head feels hot, the eyelids are half open and rigid, the eyes are prominent and fixed, the breathing is difficult and stertorous, and for the most part the pulse is strong, regular, and generally less frequent than what is natural. In a few instances, a grinding of the teeth, with slight convulsive motions, are observable. When the disease continues for any length of time, the pulse becomes languid, weak, and slow, and the breathing is shortened, until at length it ceases altogether.

In serous apoplexy the attack is more gradual in general, the face is pale and humid, the veins are depressed, the pulse is small, weak, irregular, and intermitting, respiration is impeded and stertorous, and the extremities are cold and flaccid. Sometimes these appearances are preceded by vertigo, torpor, and an impediment in the speech, together with a failure of memory.

Although the whole body is affected with the loss of sense and motion in apoplexy, it takes place nevertheless very often more upon one side than the other, which is called a hemiplegia, and in this case the side least affected with palsy is somewhat convulsed.

In some few instances of apoplexy the patient lies for several days insensible and motionless, and yet gradually recovers the use of his understanding, and his muscular strength; but for the most part he is permanently deprived of the command of one side of his body, or he regains it imperfectly after a time; his mind sustains a shock which is never recovered from; his sensations and perceptions becoming less accurate, and his memory and powers of

combining being much weakened, or at least his faculty of expression: for even while his memory and imagination are unimpaired, he is not always able to find appropriate words to express the notion which is excited in his mind.

In forming our opinion as to the event, we must be guided by the violence of the symptoms, and according as the vital functions are more or less disordered. If the fit is of long duration, the respiration laborious and stertorous, the deglutition continues to be impeded, the pulse quick and hard, the extremities cold, and the person advanced in years, the disease in all probability will terminate fatally. In some cases it goes off entirely, either by diarrhœa, hæmorrhage, return of the hæmorrhoidal or any other habitual discharge, and sometimes by the appearance of fever; but more frequently it leaves a state of mental imbecility behind it, or terminates in a hemiplegia, or in death. Even when a person recovers from an attack of this disorder, it is very apt to return after a short period of time, and in the end to prove fatal.

Where there is extravasation, the patient's recovery will be slow and difficult; for the power of absorption cannot be equal to its being immediately taken up. When the person's recovery is immediate, it is a presumptive evidence that there has been neither extravasation, effusion, nor exudation, but that the compression arose from a repletion in the vessels of the brain. The sanguineous apoplexy is more dangerous than the serous.

Dissections of those who have died of sanguineous apoplexy offer ample proof of the arterial as well as the venous system being in a remarkable state of repletion. When the scalp is divided, there is sometimes a considerable flow of blood from the occipital and frontal veins; indeed, during the dissection the venous blood flows from all parts of the head. The dura mater is sometimes thickened and bound to the cranium by strong adhesions; sometimes the tunica arachnoides loses its transparency, is opaque, and much thickened. The pia mater is often remarkably vascular; the veins are turgid with dark blood, and in particular parts of this membrane there appears high arterial action; the whole surface sometimes acquires a bright vermilion tint. Between the pia mater and tunica arachnoides there is often to be observed a serous effusion which in some bodies is colourless; in others, turbid, bloody, or even mixed with streaks of coagulable lymph. With respect to the substance of the brain, it is frequently found unusually firm, and when cut into, the numerous points of blood show that the divided vessels are enlarged. A considerable quantity of serous fluid is often found in the ventricles, and these are much enlarged. For the most part, extravasated blood is met with in the cranium, sometimes between the membranes, and sometimes in the substance of the brain, and sometimes in the ventricles. Dissections have confirmed the observation, that the blood is generally but not invariably found extravasated in the hemisphere opposite to the side of the body which was paralyzed. In most instances the extra-

vasation of blood is confined to the cerebrum, but it has not unfrequently been found in the cerebellum ;* we do not always discover extravasation of blood, but we never fail to find the remains of greatly increased action, and great congestion in the arterial and venous systems of the brain. Sometimes the longitudinal and lateral sinuses are swelled and distended.

In those who die of serous apoplexy, dissections show the cerebral arterial system nearly empty, their veins contain more blood, but less than in the sanguineous apoplexy ; the brain is somewhat flaccid and soft, with perhaps a little watery effusion on its surface, between the convolutions or in the ventricles ; the left cavities of the heart, as well as the arteries, are empty ; the right cavities contain some coagula of black blood ; the pulmonary organs are full ; frequently the digestive passages are impeded, and in a state of remarkable plenitude. In some dissections of serous apoplexy, venous turgescence, as well as effusion of serum, has been discovered ; and in others, there were satisfactory proofs of increased arterial action having existed shortly before death.

In the cure of sanguineous apoplexy no time should be lost in employing powerful remedies, the chief of which is early and extensive depletion by bleeding ; and it will be found that the action of the heart and arteries will require increased freedom and force, as the repeated bleedings have the effect of lessening the stupefactive pressure existing on the brain. On the person's being seized, due care must be taken to remove all compression from about the neck, to support him in as erect position as possible, and to allow a free admission of cool air. These steps being adopted, sixteen or eighteen ounces of blood should immediately be taken away, and if it can be drawn from the jugular vein instead of the arm, it will be the more likely to be attended with a good effect. When any branch of the temporal artery seems so turgid as to admit of being easily opened, drawing blood from thence may probably prove a still more effectual way of unloading the vessels of the brain.

In those cases where one side of the body is perceived to be more affected with the loss of motion than the other, the bleeding should be made, if possible, on the opposite side to that affected, as dissections show that the congestions producing apoplexy are generally on the side which is not affected.

If the first bleeding has not been of service, and the disease is unequivocally established, the operation should quickly be repeated a second time ; and if it is ascertained that this also is ineffectual in stopping the progress of the disease, a third bleeding ought to follow, as blood-letting is to be regarded as the most effectual remedy we can employ in sanguineous apoplexy. The quantity of blood to be drawn off must be regulated by the appearance and habits of the patient ; by the circumstances of the attack ; its violence and duration ; the effects of the previous evacuations ;

* See Cases of Apoplexy, by J. Cheyne, M. D.

the appearance of the blood, which is often sizy; and the state of the circulation; particularly the relief of the pulse and breathing, and the reduction of the complexion.

After general bleeding, leeches may be applied, if necessary, to the temples, or the scarificator and cupping-glasses to the occiput; and when sufficient evacuations have been procured by these means, we may then apply a large blister to the nape of the neck, and small ones to the extremities, together with cataplasms to the soles of the feet, or warm fomentations.

Should apoplexy appear in a gouty constitution, or after symptoms of the gout, the lancet, I think, may be used with safety and advantage.

If the power of swallowing remains, some active purgative* should be given by the mouth in divided portions, and at proper intervals, so as not to excite any vomiting; but if not, the contents of the intestines are to be dislodged by putting a couple of drops of croton oil on the patient's tongue, and then administering a strong clyster†, or one composed of a solution of soap, which is to be repeated every three or four hours, until a sufficient effect is procured.

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* 1. ℞ Infus. Sennæ Compos. f. ℥iv.
Potassæ Tartratis, ℥vj.
Tinct. Jalapæ, f. ℥ij.
Syrup. Rhamni, f. ℥iij.
Capiat dimidium pro dos.

Vel,

2. ℞ Gum. Gambog. gr. iij.
Terito bene cum
Infus. Sennæ C. f. ℥j. et adde.
Tinct. Jalapæ, f. ℥ij. M.
ft. Haustus.

Vel,

3. ℞ Hydrargyr. Submuriat. gr. vj.
Extract. Colocynth. C. gr. xv. M.
Fiant Pilulæ iv. pro dos.

† 4. ℞ Fol. Sennæ, ℥iij.
Aq. Fontan. Oj. Coque leniter ad Oss.
Colat. adde
Sodæ Sulphat. ℥j.
Ol. Ricini, f. ℥j. M.
ft. Enema.

Vel,

5. ℞ Extract. Colocynth. C. ℥ss.—℥i.
Infus. Sennæ Comp. f. ℥xi.
Ol. Ricini, f. ℥j. M.
ft. Enema, statim injiciendum.

* 1. Take Compound Infusion of Senna, four ounces.
Tartrate of Potass, six drachms.
Tincture of Jalap, two drachms.
Syrup of Buckthorn, three drachms.
Mix them, and let the half be taken for a dose, to be repeated after an hour or two, if necessary.

Or,

2. Dissolve Gamboge, three grains, in
Compound Infusion of Senna, one ounce, and add
Tincture of Jalap, two drachms.
Mix them for a draught.

Or,

3. Take Submuriate of Mercury, six grains.
Compound Extr. of Colocynth, fifteen grains.
Make them into four pills, to be taken for a dose.

† 4. Take Senna Leaves, three drachms.
Pure Water, one pint.
Boil them slowly until reduced to half a pint, strain off the liquor, and add
Sulphate of Soda, one ounce.
Castor Oil, one ounce.
Mix them for a clyster.

Or,

5. Take Compound Extract of Colocynth, half a drachm to a drachm.
Compound Infusion of Senna, eleven ounces.
Castor Oil, one ounce.
Mix them, and inject this clyster immediately.

Emetics are made use of by some practitioners. Where the disease has been brought on by intoxication, or by a large indigested meal distending the stomach, pressing upon the aorta descendens, obstructing the free expansion of the lungs, and thus crowding the arteries of the head with more blood than ought to be there, the exhibition of an emetic may be proper, and particularly so if it has been preceded by venesection; or should vomiting arise naturally, the stomach may be relieved by washing it out with a little camomile tea. The frequency with which attacks of apoplexy occur after a full meal, is a convincing proof of the immediate connexion which subsists between the stomach and brain; and where the attack has been occasioned by an overquantity of food received into the former, the sooner it is unloaded the sooner will the obstruction of the circulation be relieved. Here then an emetic of about half a drachm of the sulphate of zinc, may be administered with great propriety; and should the desired effect not be produced in ten minutes or so, the same dose might be repeated. Where apoplexy arises from, or is occasioned by an extravasation either of blood or serum on the brain, more particularly the former, it cannot be denied, I think, that an emetic would be a very hazardous remedy. A supposed case of apoplexy which fell under the care of Dr. Langslow, of Halesworth, and Mr. Crowfoot, of Beccles, gave rise to much controversy at the time with respect to the propriety of administering emetics in this disease. Those who wish to peruse the arguments which have been brought forward on the occasion by these gentlemen, as well as by many other practitioners, will find the subject amply discussed in the sixth and seventh volumes of the Medical and Physical Journal.

When the fit goes off, we may advise some of the cephalic and nervous medicines recommended under the head of Palsy; and in order to obviate any costiveness that may happen to arise, a little tincture of rhubarb may be taken occasionally.

In serous apoplexy, blood-letting may be more sparingly used than in the sanguineous. To promote an absorption of the effused serum, after bleeding proportionate to existing circumstances, it will be proper to have recourse to warm purgatives, sternutatories*, and a free application of blisters to the head, back, and extremities, and of sinapisms to the soles of the feet. Electricity is sometimes resorted to, and sparks drawn from the head, but it is only under a failure of the other remedies that this should be employed. Emetics in this species of apoplexy, as well as the former, seem of doubtful effect.

Stimulants of various kinds, such as volatile salts, cephalic elixirs and cordials, have been much employed in serous apoplexy; but as they determine the circulation to the head, their use appears not

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* 6. Pulv. Asari Compos. | * 6. Compound Powder of Asarabacca.

altogether advisable. When they are employed, sufficient evacuations should always precede their use.

Out of a fit of serous apoplexy, the cephalic and nervous medicines advised under the head of Palsy will be proper, taking some stomachic purgative now and then.

When the apoplectic symptoms proceed from opium, or any other narcotic poison taken into the stomach, the offending matter ought to be got rid of as soon as possible, by exciting vomiting with tartarized antimony or sulphate of zinc, should none have arisen spontaneously. Having procured its discharge, we are to have recourse to bleeding, and the exhibition of acrid clysters, with the view of relieving the congestion in the brain and lungs, together with the other means recommended under the head of Vegetable Poisons.

Although stimulants are improper in apoplexy arising from other causes, still they may be employed with great safety and utility in those cases where it proceeds from any narcotic poison taken into the stomach, or otherwise applied to the body; but here, too, proper evacuations should be premised. The external stimulants in general use are volatile spirits applied to the nose and temples, rubefacient ointments to the breast and back, blisters, sinapisms with horse-radish, and warm fomentations to the extremities, together with frictions with flannels or a flesh-brush impregnated with flour of mustard, and throwing cold water over several parts of the body, which in general proves one of the most effectual means of rousing apoplectics of this kind, particularly if the person is first carried out into the open air. The internal stimulants to be employed are, the volatile alkaline salts or spirits, white mustard-seed, horse-radish, white scurvy-grass; and various aromatics, such as rosemary, lavender, &c., used either in substance, tincture, or in their essential oils.

If the disease arises in consequence of the suppression of piles, leeches should be applied to the hæmorrhoidal veins, fomentations must be employed, and the intestines be stimulated by means of aloëtic purges.

Those who, from a plethoric state of the blood-vessels of the head, are predisposed to an attack of apoplexy, will act prudently in confining themselves to a very spare diet, carefully abstaining from strong liquors, from all high-seasoned food, and from meat suppers. A limitation of the use of fluids in habits predisposed to plethora and apoplexy will likewise be worthy of attention. Dr. Mossman tells us* he was taught by long observation and experience to expect effects highly beneficial from the adoption of this plan; for he constantly noticed the phenomena of plethora and obesity are referrible, not to the taking in of *solid* but of *liquid* nutriment. Persons predisposed to apoplexy should likewise be careful to keep the body open by some gentle laxative, taken occasionally; and

* See Medical and Physical Journal, vol. ix. p. 412.

such moderate exercise ought to be used as will support the perspiration without hurrying respiration, or exciting heat. Nothing tight should be worn round the neck, which might retard the return of blood from the head to the heart; and when in bed, the head ought to be supported at a proper height. The feet should be kept warm and dry, and the extremes of heat and cold must be avoided. Nothing has a better effect in preventing apoplexy in those who are predisposed to its attacks, than a perpetual issue between the shoulders, or a seton in the neck: but great care must be taken not to allow them to dry up, without opening some other drain in their stead.

When an attack of apoplexy is immediately threatened, bloodletting is the remedy most to be relied on, and the blood should be drawn either from the jugular vein or temporal artery, as before advised. The extent of the bleeding can only be determined by the nature of the case. Under doubtful circumstances, where the symptoms are not very urgent, the application of several leeches to the temples, or scarifications with cupping at the back of the head or neck, may prove amply sufficient.

Where a lethargic disposition prevails, we should advise bleeding, but particularly topical, from the temples, by means of leeches, or from the nape of the neck by the scarificator and cupping. We should also administer cathartics frequently, and direct a blister to be applied to the head or in the immediate neighbourhood of it. Every thing which may tend to stimulate the brain, such as ardent spirits, strong wines, and tobacco, ought to be avoided. Where lethargy has been induced by great excitement of the mind, a change of scene, travelling by easy stages, cheerful company, the amusements of watering-places, and a course of those mineral waters which relax the bowels (such as those of Cheltenham) are worthy of a trial.

The coup-de-soleil, or stroke of the sun, which so frequently occurs in warm climates to those who are long exposed under its immediate and powerful influence, seems evidently to be an attack of apoplexy, and is to be treated in the same manner as pointed out in the preceding pages. The application of linen cloths wetted in cold vinegar and water to the temples, or rather over the whole of the head, having first cut off the hair, may likewise be tried.

It may not be improper to remark here, that as the vital principle frequently remains in a latent state for some time, and as we are yet unacquainted with any certain criterion between positive and apparent death besides that of putrefaction, some appearances of incipient decomposition should therefore be allowed to take place, in every case of sudden decease, before interment. The cessation of circulation and respiration, and coldness with rigidity of the limbs, taken separately, are not of sufficient importance, and even when combined, leave a slight opening for doubt; but putrefaction is the only certain proof of the occurrence of death which can be considered as conclusive. Every other circumstance, how-

ever strong as presumptive evidence, affords no proof for a positive one. In warm countries, where it is customary to bury the bodies within four-and-twenty hours, I have great reason to fear that premature interment sometimes happens.

PARALYSIS, OR PALSY.

PALSY is a diminution or total loss of the powers of motion and sensibility in certain parts of the body, often attended with drowsiness. In some instances the disease is confined to a particular part or set of muscles; but it more usually happens that one entire side of the body, from the head downwards, is affected, which is known by the name of hemiplegia.

If the power of motion and sense of feeling in the half of the body, taken transversely, be impaired, the complaint is denominated paraplegia.

Palsy may arise in consequence of an attack of apoplexy; and like it may be occasioned by any thing that prevents the flow of the nervous power from the brain into the organs of motion; hence tumours, over-distension and effusion, distortions of the spine, and a thickening of the ligaments that connect the vertebræ together, often give rise to it. It may also be occasioned by translations of morbid matter to the head, by the suppression of usual evacuations, and by pressure made on the nerves by luxations, fractures, wounds, or other external injuries. The long-continued application of sedatives will likewise produce palsy: as we find those whose occupations subject them to the constant handling of white-lead, and those who are much exposed to the poisonous fumes of metals or minerals, are very apt to be attacked with it. Whatever tends to relax and enervate the system, may likewise prove an occasional cause of this disease: hence those who lead a sedentary or luxurious life; those who are guilty of frequent irregularities, or great debaucheries; those who are engaged in intense studies during the night, or labour under great distress of mind or anxiety, are very subject to this malady.

It has very properly been doubted by some writers* whether palsy of the lower extremities alone, or of one single part, has so often its cause in the brain as it is said. The cause may, it is thought, also reside either in the nervous chord of the spine, or in the abdominal viscera, or in the affected limbs themselves. The spinal chord is certainly composed of a nervous mass, and has the same membranes as the brain; hence it may be affected by the same diseases, such as inflammation, suppuration, induration, tumour, conjestion or ossification of the blood-vessels; collection of any fluid, by irritation, weakness, or exhaustion of the nervous

* See Observations on Deranged Manifestations of the Mind, by Dr. Spurzheim, p. 23.

mass. The spinal chord may also be injured or compressed by the deviation of any of the vertebræ. It is to inflammation of a more chronic form in that part, that we impute those shaking palsies which are attended with pain.

All the varieties of palsy more generally appear in the aged and infirm than in the young and robust. The left side is more frequently affected than the right.

A decline of energy is often to be regarded as a commencement of palsy. In the premature diminution of the capacity of either bodily or mental exertions, there may be, in many cases, a well-founded fear of ultimate paralysis, unless the tendency to it be in due time counteracted by the relinquishment of pernicious habits, and the administration of appropriate remedies.

Palsy usually comes on with a sudden and immediate loss of the motion and sensibility of the parts; but in a few instances it is preceded by a numbness, coldness, and paleness, and sometimes by slight convulsive twitches. When the head is much affected, the eye and mouth are drawn on one side, the memory and judgment are much impaired, and the speech is indistinct and incoherent. If the disease affects the extremities, and has been of long duration, it not only produces a loss of motion and sensibility, but likewise a considerable flaccidity and wasting away in the muscles of the parts affected.

It has been mentioned, that a curvature of the spine, owing to one or more of the vertebræ being displaced, sometimes induces paralytic affections of the lower extremities, from the pressure that they make upon the nerves of those parts; and that sometimes the disease appears to arise solely from the thickening of the ligaments that connect the vertebræ together, without any particular affection of the bones. When one of the vertebræ only is diseased, it is observed that the patient is more completely deprived of the power of his limbs than when two or more of them are displaced, owing, as Mr. Bell* thinks, to the angle being more acute, and consequently the pressure on the medulla spinalis greater, when one bone only is thrown out of the range. This also accounts for the paralytic symptoms in some being less remarkable in the more advanced stages of the disease than they were at first; for although one bone only is displaced at first, yet one or both of the contiguous vertebræ almost constantly yield at last; and the difference arising from this is so great, that patients almost always linger and die in the course of a year or two, often in a less time, when one bone alone is deranged; while they live for a great length of time, frequently as long as if no such circumstance had occurred, when the curvature of the spine becomes more extended.

Paralytic affections from distortions occur in all ages; but more frequently about puberty than at any other period, and more commonly in girls than in boys. In general the effects that result

* See his System of Surgery, vol. vii. p. 213.

from them are observed before the cause is suspected; for there is seldom much pain in the part immediately affected. When distortion of the spine occurs during infancy, the patient appears to be suddenly deprived of the use of his limbs; but at more advanced periods, he complains first of feebleness and languor, and of numbness or want of feeling in the lower extremities. By degrees this want of sensibility is found to increase, and he is often observed to stumble, and to drag his legs, instead of lifting them properly; nor can he stand erect for any length of time without much difficulty. At last he loses the use of his legs entirely, which become altogether paralytic; and when the spine is distorted much forward, so as to compress the thoracic and abdominal viscera, he becomes distressed with dyspnœa, or with complaints in the stomach and bowels, according to the part of the spine that is diseased.

Palsy is to be distinguished from apoplexy by the pulse; which in the former disease is soft and slow, by the loss of sense and motion being only partial, by the absence of stertor, and likewise by the other symptoms.

When palsy attacks any vital part, such as the brain, heart, or lungs, it soon terminates fatally. When it arises as a consequence of apoplexy, it generally proves very difficult to cure. Paralytic affections of the lower extremities, ensuing from any injury done to the spinal marrow, by blows and other accidents, usually prove incurable. Palsy, although a dangerous disease in every instance, particularly at an advanced period of life, is sometimes removed by the occurrence of the diarrhœa or fever. A feeling of warmth, and a slight pricking pain, as if stung by ants, in the parts affected, with returning sensation and motion, are favourable symptoms.

The morbid appearances to be observed on dissection in palsy are pretty similar to those which are to be met with in apoplexy: hence collections of blood, and of serous fluids, are often found effused on the brain, but more frequently the latter, and in some instances the substance of this organ seems to have suffered an alteration. In palsy, as well as in apoplexy, the collection of extravasated fluid is generally on the opposite side of the brain to that which is affected.

When this disease arises in a young person of a full plethoric habit, comes on suddenly, and the head appears to be much affected, or seems to arise from the causes producing apoplexy, it will be advisable to take away some blood, by opening the jugular vein or temporal artery; after which it will be proper to give an active purgative, as advised under the head of Apoplexy; but in old age, or where palsy arises in a debilitated constitution, neither bleeding nor purging should be resorted to. Where costiveness prevails in such habits, it may be obviated by some stomachic laxative, such as the tinctura rhei composita.

In most cases, but particularly where the disease has arisen

in aged or decrepit persons, the external application of stimulants will be highly proper; wherefore the parts affected, as well as all along the spine, may be rubbed several times a day with flannels, or a flesh-brush impregnated with flour or essence of mustard, or else with the palms of the hand, and some kind of rubefacient liniment*: and, in addition to these remedies, we may recommend the application of warm fomentations, blisters, and sinapisms† to the palms of the hands and soles of the feet.

As a gentle stimulus to parts affected by paralysis, urtication may sometimes be used.

Warm bathing is a remedy which has been much employed in most cases of palsy, as an external stimulant. In those, however, which arise in sanguineous habits, from a congestion of blood in the vessels of the brain, its use would, in all probability, prove injurious, both by stimulating the solids and rarifying the fluids, and thereby becoming a stimulus to the sanguiferous system; but in those cases where palsy has arisen in consequence of the application of narcotic powers, diminished vital heat, or an enfeebled constitution, the use of warm bathing will be likely to prove highly beneficial. In palsy we ought therefore most cautiously to ascertain whether an increased or diminished degree of vital heat or action in the sanguiferous vessels is the cause of the disease. Whether the natural baths, such as those of Bath, in Somersetshire, &c., possess more efficacious qualities than the ordinary warm ones, seems a matter of doubt with many practitioners, as

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* 1. ℞ Ol. Olivæ, f. ℥ij.
— Terebinth. f. ℥j. M.
ft. Linimentum.

Vel,

2. ℞ Spirit. Camphoræ, f. ℥j.
Tinct. Cantharid. f. ℥ij.
Liquor. Ammon. Subcarb. f. ℥ss. M.

Vel,

3. ℞ Liniment. Ammon. Subcarbonat. f. ℥xij.
Ol. Terebinth. f. ℥iij. M.
ft. Linimentum.

Vel,

4. ℞ Liniment. Camph. Comp. f. ℥j.
Tinct. Cantharid. f. ℥ij. M.

† 5. ℞ Semin. Sinap. Pulv.
Rad. Armoraciæ Contus. āā ℥j.
Micæ Panis, aut Farin. Sem. Lin. ℥ij.
Acidi Acetic. Dilut. q. s. M.
ft. Cataplasma, plantis pedum applicandum.

* 1. Take Olive Oil, two ounces.
Oil of Turpentine, one ounce.
Mix them for a Liniment.

Or,

2. Take Camphorated Spirit, one ounce.
Tincture of Spanish Fly, two drachms.
Solution of Subcarbonate of Ammonia, half an ounce.
Mix them.

Or,

3. Take Liniment of the Subcarbonate of Ammonia, twelve drachms.
Oil of Turpentine, three drachms.
Mix them.

Or,

4. Take Compound Camphor Liniment, one ounce.
Tincture of Spanish Fly, two drachms.
Mix them.

† 5. Take Mustard Seed, in Powder,
Horse-radish, bruised, of each an ounce.
Crumb of Bread, or Linseed Meal, two ounces.
Diluted Acetic Acid, a sufficiency to form a cataplasm, which is to be applied to the soles of the feet.

the substances with which the former are impregnated are but trifling in point of quantity.

The late Dr. Heberden thought these waters were neither in any way detrimental, nor of the least use in palsy. Bath has indeed been for a great length of time a favourite place of resort for the paralytic, whether made so by debauchery, or any other cause of premature decay; but it is highly probable the fashionable springs of that crowded mart of health are not impregnated with the power of restoring lost energies, or bringing back the tide of ebbing animation.* When the Bath waters are used in palsy, they may be employed both in the form of bathing and pumping every other day, avoiding the latter on the head.

When a natural warm bath cannot be resorted to, an artificial one may be substituted: and this may be made by dissolving a proper quantity of the ferri sulphas in the water, and impregnating it with fixed air.

Electricity, both by sparks and shocks, is another remedy which is universally employed in the cure of the palsy as an external stimulant, and often with the most happy effect; but in using it, proper care should be taken to apply it only with a moderate force, as more is to be expected from its repetition than from employing it with violence; and likewise to confine its application to parts which are somewhat remote from the head, as in those cases which depend upon a compression of the brain, it might do injury, by acting on the vessels of this organ.

Galvanism is also a remedy from which advantages might probably be derived. Indeed some practitioners have gone so far as to declare, that they have experienced its effects in palsy to be superior to electricity. Dr. Bardsley tells us,† he has found it to succeed when the latter has failed. To both electrical and galvanic shocks, may be added exercise by friction on the diseased limbs, either with the hand or a flesh brush, together with every other means that can be devised to bring the muscles into action and restore the languid circulation; the hands and fingers should be opened and well rubbed frequently, and the arms be exercised with a pulley. The exercise of dumb-bells may be of great assistance also.

When the disease affects several different parts of the body, as in hemiplegia, or a paraplegia, we should use stimulants internally as well as externally. Those in most general use are mustard seed, horse-radish, garlic, and volatile alkaline salts, or spirits, and æther, which may be taken agreeably to the prescription advised below.‡

* See Essay on Nervous Diseases, by John Reid, M.D.

† See his Medical Reports and Cases, p. 183.

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‡ 6. ℞ Sem. Sinap. Alb. ℥j.
Capiat æger cochl. min. ij. ex Aq. Frigid. cyatho bis terve in die.

‡ 6. Take White Mustard Seed, two teaspoonsful twice or thrice a day, washing them down with a little cold water.

The arnica montana (leopard's bane) is a remedy* much recommended, and great advantages have been derived from it in paralytic and other affections depending upon a want of nervous energy.

Vel,

7. R Sem. Sinap. Alb. Contus.
Rad. Armoraciæ, āā ℥ij.

Cort. Aurant. ℥ss.

Aq. Fontan. Oij. Coque ad Oj.
Col. Fiat Decoctum, cujus sumat cyath. j. amplum ter in die. Adde pro re nata,

Tinct. Valerian. Ammon. ♏ xx.

Vel,

8. ℞ Spirit. Ammon. Aromat. f. ℥ j.

Sumat ♏ x.—xx. pro dos. ter in die.

Vel,

9. ℞ Tinct. Lav. Comp. f. ℥ij.

Spirit. Ammon. Fœtid. f. ℥ss. M.

Capiat ♏ xvj.—xxvj. in quovis vehiculo appropriato.

Vel,

10. ℞ Spirit. Armoraciæ Compos. f. ℥ij.

——— Ammon. Fœtid. ♏ xvj.

Tinct. Valerian. f. ℥ij.

Aq. Anethi, f. ℥j. M.
ft. Haustus, ter in die sumendus.

Vel,

11. ℞ Ammon. Subcarbon. gr. vj.

Tinct. Cardam. Comp. f. ℥ij.

Aq. Menth. Virid. f. ℥jss. M.

ft. Haustus, 6tis horis capiendus.

Vel,

12. ℞ Spirit. Ammon. Aromat. f. ℥ss.

Aq. Pimentæ, f. ℥x.
Tinct. Cinnam. C. f. ℥ij. M.

ft. Haustus, sextis horis adhibendus.

* 13. ℞ Flor. Arnicæ Mont. ℥ij.—℥iij.

Aq. Bullient. f. ℥x. Macera per horam in vase clauso, et cola.

Or,

7. Take of Bruised Mustard Seed,
Horseradish Root, of each two ounces.
Orange Peel bruised, half an ounce.
Pure Water, two pints.
Boil them slowly until reduced to one pint, then strain off the liquor, and let the patient take a wine-glassful three times a day, adding occasionally,
Ammoniated Tincture of Valerian, thirty drops.

Or,

8. Take Aromatic Ammoniated Spirit, one ounce.
Of this, from fifteen to thirty drops may be given for a dose thrice a day.

Or,

9. Take Compound Tincture of Lavender, two drachms.
Fœtid Spirit of Ammonia, half an ounce.
Mix them, and take from twenty-four to fifty drops occasionally, in any suitable vehicle.

Or,

10. Take Compound Spirit of Horseradish, two drachms.
Fœtid Spirit of Ammonia, twenty-four drops.
Tincture of Valerian, two drachms.
Dill Seed Water, one ounce.
Mix them for a draught, to be taken three times a day.

Or.

11. Take Subcarbonate of Ammonia, six grains.
Compound Tincture of Cardamoms, two drachms.
Mint Water, one ounce and a half.
Mix them, and let this draught be taken every six hours.

Or,

12. Take Aromatic Ammoniated Spirit, half a drachm.
Pimenta Water, ten drachms.
Compuond Tincture of Cinnamon, two drachms.
Make these into a draught, to be taken as frequently as the former.

* 13. Take Flowers of Leopard's Bane, two or three drachms.
Boiling Water, ten ounces.
Let them infuse for an hour in a covered vessel, then strain off the liquor.

Resinous substances, such as guaiacum and the turpentines, have sometimes been employed to advantage in palsy: but from being apt to prove too inflammatory, their use is by no means general in this disease.

When palsy has arisen in consequence of the system being enervated by any debilitating cause, besides applying stimulants externally, and likewise administering them internally, we should make use of tonics joined with aromatics, as advised under the head of Dyspepsia.

The arsenical solution is a remedy which promises some relief in this disease, particularly when confined to particular parts.

From the tonic and good effects of the nitrate of silver in epileptic affections, it has also been prescribed in cases of paralysis, and sometimes with great advantage. We may begin with the eighth of a grain at first, increasing the dose gradually every other day, until we get to three grains in the twenty-four hours.

The nux vomica is a medicine which has lately been given with benefit, it is said, in some cases of palsy. It will be best to begin with two grains, night and morning, in powder, combined with about ten grains of compound tragacanth, and to increase the dose every other day, by an additional half-grain, till it amounts to seven grains.

In that palsy of the lower extremities which is occasioned by a deformity of the spine, or which arises from a thickening of the ligaments that connect the vertebræ together, without any particular affection of the bones, the insertion of issues conjoined with a recumbent position (see Scrofula) have proved advantageous in many cases. The late Mr. Pott speaks highly of the effects of drains, placed as near as possible to the tumour. He recommends an issue to be opened with caustic on each side of the swelling, large enough to admit of a kidney bean, and the bottom of the sore to be sprinkled from time to time with powder of cantharides.

My advice was some time ago requested on the case of a young lady about seventeen years of age, who had gradually lost all sense of feeling as well as motion in her lower extremities. The disease had then been of two year's standing; she had consulted two or three practitioners, and had gone through a course of the usual medicine, together with blistering and other stimulating external applications, and she had made trial both of warm and cold bathing; but all without avail. Independent of the paralytic affection in the lower extremities, she seemed to suffer no inconve-

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℞ Colati Liquoris, f. ʒx.	Take of the strained liquor, ten drachms.
Tinct. Card. C. f. ʒij.	Compound Tincture of Cardamoms, two drachms.
Syrup. Zingib. f. ʒj. M.	Syrup of Ginger, one drachm.
ft. Haustus, ter in die sumendus.	Mix them, and let this draught be taken thrice a day.

nience; her countenance was healthy, and her appetite good; she slept well, and felt no pain. She rode on horseback every day when the weather permitted, and when it did not, she went out in a carriage for the benefit of the air. Upon being informed of the history of the case, I immediately suspected that the disease was occasioned by some injury done to the spine, or that there was a thickening of the ligaments that connect the vertebræ together; and in this supposition I was confirmed by passing my hand down the lower extremity of the spine, making a proper pressure at the same time. I ordered issues to be inserted in the manner just advised, and had the satisfaction to see my patient soon recover the feeling in her feet, so as to be sensible when they touched the ground; and at the end of about three months she was capable of walking alone. I have every reason, however, to conclude that the disease was in the ligaments only, and that the bones of the spine were not affected. When the vertebræ are diseased, a complete cure, I am afraid, can seldom be obtained: but the symptoms may certainly be greatly mitigated, and the pressure upon the spinal marrow diminished, by exciting a discharge in the neighbourhood of the parts, and keeping the patient very much in a recumbent position.—See Scrofula.

Dr. Clutterbuck informs us, in a pamphlet published not very long ago, that he had found mercury to be an excellent antidote to lead, and that he had used it with the most happy effects in many instances of paralytic affections which had arisen among those who were employed in manufacturing the several preparations of lead, and in applying them to their respective uses. In confirmation of the success of the remedy, he has recited several cases which seem clearly to prove its utility; and he has likewise added a letter from the late Dr. Bradley, physician at the time to the Westminster Hospital, bearing testimony in favour of the use of mercury in such cases.

In the removal of those distressing and terrible symptoms which frequently result from exposure to saturnine emanations (see Colica Pictonum), the nitrate of silver has been in some cases employed with success.* The remedy was administered in doses of from one to five grains three or four times a day, preceded by a dose of castor oil. From the activity of its operation on the bowels it may be necessary to combine it occasionally with opium.

The paralysis, or loss of nervous power in particular limbs, which arises as a consequence of that painful and obstinate colic produced by the poison of lead, is found to be peculiarly relieved by a use of the Bath waters, more especially when applied externally, either generally or upon the part affected.

In the treatment of that species of palsy of the hands which is produced by the poison of lead, the use of an ingenious mechanical

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* See London Medical Transactions of the College of Physicians, vol. v. art. 4.

contrivance, adapted to place the muscles in a favourable state, is highly recommended by a late writer,* and it appears also to have been employed by him with much advantage. It is a splint, made somewhat in the form of a battledore, to be fastened under the fore-arm, and continued to the extremities of the fingers. The object of the instrument is to take off the weight appended to the extremities of the muscles, under the idea that this weight is a principal object to the restoration of the muscular power. In the first trial which our author made, the splint was applied to the right arm only, and the result, we are told, was as follows :

In one month from the first application he had the satisfaction to find that the right hand was able to raise an eight ounce weight into a line with the fore-arm by the power of the extensor muscles ; whereas at this time the left hand remained as perfectly paralytic as before. In five weeks more the extensor muscles of the right hand had regained their natural strength, but the left hand continued paralytic.

For the purpose of ascertaining how far this improvement could be conceived to have arisen from any change of the constitution, and not from the local means which was used, it appears that he discharged the patient from under his care for one month, at the end of which time he returned to him with the left hand still perfectly paralytic, but the right hand enjoying its full and natural powers. The splint was then applied to the left hand, and in seven weeks the power of the extensor muscles of that hand was also perfectly restored.

The result of the experiment certainly places the use ofthis mechanical contrivance in a favourable light ; but it is proper to observe, at the same time, that it failed in producing the desired effect in some cases of palsy which were not occasioned by the poison of lead.

In palsy the diet should be light, nutritive, and of a warm, aromatic nature. If the patient is able to walk, he should take such daily exercise as his strength will admit ; but if deprived of the use of his legs, he ought then to be carried abroad in a carriage, or on horseback ; and frictions with strong stimulants should frequently be applied to the parts affected. Flannels should be worn next to the skin, and all exposures to cold, damp, and moist air, ought carefully to be avoided. If possible, a warmer climate should be resorted to.

In those cases where the appetite fails, and the person sinks into a state of debility from the long continuance of the disease, it will be proper to employ the bark of cinchona, stomachic bitters, and other tonics, to strengthen the system, as advised in Dyspepsia.

The inhabitants of the East Indies are very subject to a species of palsy which is called barbiers, but known by the natives under

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* See Dr. Pemberton's Treatise on the Diseases of the Abdominal Viscera.

that of beriberii, a word signifying a sheep. The disease probably has received this denomination, because those who are seized with it have a tottering in the knees and a peculiar manner of walking, exhibiting to the fancy a representation of the gait of that animal.

It attacks both natives and strangers, epecially during the rainy season, commencing in November and terminating in March or April, but is most violent on the Malabar coast. During this season the land winds issue every morning about sunrise from the neighbouring mountains with remarkable coolness; and such as are tempted by the serenity of the atmosphere to sleep exposed to these winds, are often suddenly seized with the disease.

Among the chief symptoms by which it is characterized, is a lassitude over the whole body. The motion and sensation, especially of the hands and feet, are languid and depraved. Sometimes only a part of the extremities are affected, and at others the whole of them. The speech is now and then so much obstructed, that the patient can scarcely pronounce a syllable articulately.

The disease seldom proves fatal; but the cure is generally tedious, and notwithstanding a use of the most powerful medecines, is said* seldom to be effected till after the shifting of the monsoons, unless the patients are removed to the coast of Coromandel, or to any place to the eastward of the Balagat mountains, where, by a change of air, they quickly recover.

The means principally employed by the native practitioners, however, are fomentations and baths made of aromatic herbs, together with strong frictions. The Indians likewise adopt earth-bathing by putting the patient into a hole dug in the ground, and covering him with sand up to his neck. This is performed in the middle of the day, and he remains there as long as he can bear the heat of the sand.

When the disease is chronical, and of long standing, sudorific medicines are proper; and therefore camphor, volatile salts, and gum guaiacum, are frequently given. To obviate costiveness, aloëtic purgatives must be interposed. Due exercise, either on horseback or by walking, will be necessary to restore the action and strength of the extremities, together with warmth, and frictions with rubefacients.

ORDER II.

ADYNAMIÆ.

A DIMINUTION or defect of vital power is the character of this order.

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* See Dr. Lind on the Diseases of Warm Climates, p. 286.

SYNCOPE, OR FAINTING.

THIS disease consists in a decreased action, and sometimes total cessation of the pulse and respiration. It is sometimes preceded by anxiety about the præcordia, a sense of fulness ascending from the stomach towards the head, vertigo, or confusion of ideas, dimness of sight, and coldness of the extremities. Attacks of syncope are frequently attended with, or end in vomiting, and sometimes in convulsions, or in an epileptic fit.

The causes of this affection are sudden and violent emotions of the mind, pungent and other kinds of odours, derangement of the primæ viæ, debility from preceding disorders, defect of the stimulus of distention, as after blood-letting, hæmorrhage, or the operation of paracentesis in ascites; organic affection of the heart, or of the parts immediately connected with it, such as aneurism either of the heart itself, or of the arch of the aorta; ossification of the valves of the heart, or its large blood vessels, or polypi.

During the paroxysm, the nostrils are to be stimulated with volatile spirits or salts, and the face to be sprinkled with cold water. Where the disease arises as the consequence of a hæmorrhage, the patient should be placed in a recumbent posture, and in all cases a free admission of pure cool air should be allowed. If the disease arises as the consequence of debility or defective excitement, the system should be strengthened by the use of cinchona, sulphuric acid, stomachic bitters, and chalybeates, together with cold bathing.—(See Dyspepsia.) It need hardly be added, that avoiding the occasional causes, and removing them, if in our power, is a matter we should always keep in view.

VERTIGO, OR GIDDINESS IN THE HEAD.

VERTIGO proceeds most usually either from too great a fulness of blood in the vessels of the head, or is symptomatic of Dyspepsia, hypochondriasis, or hysteria.

The patient is seized on a sudden with a swimming in the head; every thing appears to him to go round, he staggers, and is in danger of falling down.

This complaint is attended with no danger, when it arises as a symptom of hysteria, or any other nervous disease; but when it takes place in consequence of an overfulness of blood in the vessels of the head, and is not timely relieved by proper evacuation, it may terminate in apoplexy or palsy.

Where vertigo prevails as a symptom of some nervous disease, recourse must be had to the medicines and remedies which are most suitable to the removal of the primary affection (see Hysteria and Dyspepsia): but where it is occasioned by an over-distention of the vessels of the head, either general or topical bleeding, by the application of several leeches to the temples, or the scarifi-

cator and cupping-glasses to the nape of the neck, the latter being the most certain, together with a frequent use of cooling purgatives, and a spare regimen, ought to be employed. Should the complaint not be removed by these means, scapulary issues will be advisable.

DYSPEPSIA, OR INDIGESTION.

THIS disease chiefly arises in persons between thirty and forty years of age, and is principally to be met with in those who devote much time to study, or who lead either a very sedentary or irregular life. A great singularity attendant on it is, that it may, and often does, continue a great length of time, without any aggravation or remission of the symptoms. The disease is a frequent attendant on chronic weakness.

In Dr. Parry's opinion,* idiopathic dyspepsia consists in a morbid fulness of the vessels of the villous coat of the stomach.

Great grief and uneasiness of mind, intense study, indolence, profuse evacuations, excess in venery, hard drinking, particularly of spirituous liquors, irregularity of life, too frequent a use of warm diluent liquors, and of tea, tobacco, opium, and other narcotics, immoderate repletion and over-distention of the stomach, very frequent rejection of the saliva, in consequence of smoking or chewing tobacco, or a diminution or interruption of the due secretion of it, a deficiency in the secretion of the bile, pancreatic or gastric juice, diseases of the liver and spleen, hysteria, hypochondriasis, and exposure to moist and cold air, when without exercise, are the causes which usually occasion dyspepsia. Every thing which diminishes the amount of nervous influence transmitted to the stomach, weakens the digestive action.

Unless where dyspepsia arises from slight inflammation and thickening of the coats of the stomach, and then exists as a primary disease, it is almost universally symptomatic of organic affection of the liver or spleen, and not an idiopathic disease; of which the practitioner may be convinced by paying due attention to the colour of the alvine and renal discharges, to the pasty or doughy feel of the skin, and the dingy pale hepatic hue of the countenance, that generally attend dyspepsia.

Scirrhus in the pyloric orifice, or outlet of the stomach, is very apt to take place in those who addict themselves to ardnet spirtis; and there are numerous glands at this part which, from such a practice, are liable to be affected, giving rise to a high degree of acidity in the stomach. Many, perhaps most of the diseases of the digestive organs, caused by various circumstances, consist in a weakness or atony of the affected parts, accompanied by a deficiency or depravity of the fluids secreted by them, and upon

* See his Elements of Pathology and Therapeutics.

the healthy qualities of which a right performance of the functions depends.

The state of the tongue is in general a pretty good criterion of a disordered state of the stomach, but it does not point out the kind and degree of that disorder. With a furred tongue, there is perceived a disagreeable taste in the morning, and the breath in many instances, notwithstanding the greatest care that can be taken, acquires an offensive smell. In consequence of continued disease, the cuticle of the tongue sometimes appears to have lost its usual colour, and to become permanently white.

In some states of depraved digestion, there is nearly a complete disrelish for food; but still the appetite is not greatly impaired, as at the stated periods of the patient's meals he can eat heartily, although without much gratification. With hard drinkers nausea and vomiting frequently occur in the morning; and in ruined constitutions there is an almost constant thirst, with feverishness, loss of appetite and strength, shortness of breath, paleness of the countenance, languor, and towards the close, anasarcous swellings.

In stomach complaints, in addition to defective appetite, indigestion, flatulency in a high degree, acidity and cardiaglia, the patient is often afflicted with costiveness, vertigo, pain in the balls of the eyes, imperfect vision, ringing in the ears, and palpitations. The mind in such cases is frequently irritable and desponding, and great anxiety is observable in the countenance. The pulse is usually feeble and frequent, and slight exercise produces considerable fatigue and perspiration. Restlessness prevails at night, the sleep is disturbed by frightful dreams and startings, not affording much refreshment, and occasionally there is much moaning, with a sense of a heavy weight on the chest, or what has been denominated the night-mare. In some instances, the disease is complicated with gastrodynia, or severe pain in the stomach itself, and now and then with pyrosis.

Although dyspeptic complaints, when they exist in consequence of debility of the stomach, may be alleviated, or be entirely removed by timeously desisting from bad habits and taking proper medicines, still when they have been of long continuance, so as to produce great debility, and pass into some other disease, such as dropsy; or when they orginate from an organic affection, such for instance as a scirrhus of the pylorus, or ulceration of the coats of the stomach, they will be sure to prove fatal.

The morbid appearances to be observed on dissections of this disease, are principally confined to the liver, spleen, and that part of the stomach which is called the pylorus, this being often found either in a contracted, scirrhous, or ulcerated state. In every instance the stomach is perceived to be considerably distended with air, and occasionally its interior surface is beset with tubercles, or partially eroded.

In the case of habitual drunkards and hard drinkers, the coats of this viscus are often found thickened and indurated, and its

interior surface beset with small processes of a fungous appearance; the liver in general is much enlarged, and studded with tubercles, the spleen usually somewhat diminished in size, and the gall bladder pale and nearly empty.

In the treatment of hypochondriasis, three indications must be attended to:—

The first is to avoid or remove the remote causes which have been enumerated. A knowledge of the cause which has given rise to it, will point out the best means of relief.

The second is to obviate the symptoms which contribute to continue or aggravate the disease.

The third is to restore the tone of the organ, if possible.

To effect the first of these intentions, it must be the business of the physician to point out to the patient the indispensable necessity of renouncing such habits or pursuits as may have tended to give rise to the disease, as the continued application or frequent repetition of these causes may defeat the use of whatever remedies are employed.

If he leads a fashionable life, it will be necessary for him to forsake the haunts and habits of dissipation; to leave the crowded city, and its alluring amusements, conducted in rooms, where the air he breathes is vitiated and contaminated by the great number of persons collected together; to shun luxurious tables, indolence, and late hours; to retrace the footsteps by which he had deviated from simple nature, and to court the country, pure air, moderate exercise, early rising, simple diet, the society of a few select friends, and pleasing occupations.

To accomplish the second intention of obviating the symptoms which contribute to continue or to aggravate the disease, it will be necessary to remove the crudities in the stomach by giving a gentle emetic. It will also be necessary to correct the morbid acidity in the organ by alkalies and absorbents,* as the potassæ

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* 1. Liquoris Calcis Oj.
Capiat æger, f. ℥ij.—℥iv. bis in die.

Vel,

2. ℞ Liquor. Potassæ, f. ℥j.
——— Calcis, f. ℥vij. M.
Capiat æger cochleare magnum bis in die ex poculo jusculi bovini.

Vel,

3. ℞ Magnesiæ, ℥iij.
Pulv. Rhei, ℈j.
Aq. Fontan. f. ℥iv.
—— Cinnam. f. ℥j.
Tinct. Lavand. C. f. ℥ss. M.
ft. Mistura, cujus sumat cochl. ij. ter in die.

Vel,

4. ℞ Cretæ Præparat. gr. xv.
Spirit. Myristicæ, f. ℥j.

* 1. Let the patient take from two to four ounces daily of Lime Water.

Or,

2. Take Solution of Potass, one drachm.
——— Lime, seven ounces.
Mix them, and take a table-spoonful twice a day in a little beef-tea.

Or,

3. Take Magnesia, three drachms.
Rhubarb in powder, one scruple.
Pure Water, four ounces.
Cinnamon Water, one ounce.
Compound Tincture of Lavender, half a drachm.
Of this mixture two table-spoonsful may be taken three times a day.

Or,

4. Take Prepared Chalk, fifteen grains.
Spirit of Nutmeg, one drachm.

subcarbonas, liquor calcis, magnesia, chalk, &c.; to assuage the pain and flatulency in the stomach and intestines by carminatives,* antispasmodics,† and opiates; and, lastly, to obviate costiveness, by a use of such gentle laxatives,‡ joined with aromatics, as will promote a ready discharge of the contents of the intestines, without hurrying their action, or increasing the excretions made into their cavity. Friction with the hand over the region of the stomach and bowels every morning and night, might increase that effect; and where the patient is distressed with flatulency, may be regarded as a good auxiliary remedy.

Aq. Fontan. f. ℥jss.
Liquor. Potassæ, ℥ x.
Syrup. Zingib. f. ℥ij. M.
ft. Haustus, bis die sumendus.

Vel,

5. ℞ Magnesiæ, ℈ij.
Pulv. Rhei, gr. v.
—— Nuc. Mosch. gr. iij. M.
ft. Pulvis, mane et vespere sumendus.

* 6. ℞ Cret. Præparat. gr. xij.
Aq. Menth. Pip. f. ℥ss.
—— Font. f. ℥j.
Spirit. Pimentæ, f. ℥ij.
Tinct. Opii, ℥ viij. M.
ft. Haustus, ter die sumendus.

† 7. ℞ Aq. Anethi f. ℥iij.
Spirit. Cinnam. f. ℥j.
Tinct. Valerian. Ammon. f. ℥ij.

——Opii, ♏ xxv.
Æther. Sulphuric. f. ℥j. M.
Capiat cochl. larga ij. bis terve in die, vel dolore ventriculi urgente.

‡ 8. ℞ Pil. Aloes cum Myrrh. gr. xv. in Pilulas iij. pro dos. divid.

Vel,

9. ℞ Aloes Spicatæ Extract.
Pulv. Rhei, āā ℥j.

—— Cinnam. Comp. ℈j.

Sapon. Venet. ℥ss.
Syrup. q. s. M.
Fiat Massa in pilulas l. dividenda, quarum ij. sumat pro dos.

Vel,

10. ℞ Confect. Sennæ, ℥ij.
Pulv. Jalapæ, ℥ij.
—— Cinnam. Com. ℈j.

Potassæ Supertart. ℥j.

Syrup. Zingib. q. s. M.
ft. Electuarium, cujus capiat quantitatem juglandis hora somni.

Pure Water, one ounce and a half.
Solution of Potass, fifteen drops.
Syrup of Ginger, two drachms.
Mix them, and let this draught be taken twice a day.

Or,

5. Take Magnesia, two scruples.
Rhubarb in powder, five grains.
Powdered Nutmeg, three grains.
Mix them. This powder may be taken morning and evening.

* 6. Take Prepared Chalk, twelve grains.
Peppermint Water, half an ounce.
Pure Water, one ounce.
Spirit of Pimento, two drachms.
Tincture of Opium, twelve drops.
Mix them. This draught is to be taken three times a day.

† 7. Take Dill Water, three ounces.
Spirit of Cinnamon, one ounce.
Ammoniated Tincture of Valerian, two drachms.
Tincture of Opium, forty drops.
Sulphuric Æther, one drachm.
Mix them, and let two table-spoonsful be taken twice or thrice a day, or whenever the pain in the stomach is severe.

‡ 8. Take Aloetic Pills with Myrrh, fifteen grains.
Divide the mass into three pills for a dose.

Or,

9. Take Soccotrine Aloes,
Powdered Rhubarb, of each one drachm.
Compound Powder of Cinnamon, one scruple.
Hard Soap, half a drachm.
Syrup, a sufficiency to form the mass which is to be divided into fifty pills, of which two will be a sufficient dose.

Or,

10. Take Confection of Senna, two ounces.
Jalap in Powder, two drachms.
Compound Powder of Cinnamon, one scruple.
Supertartrate of Potass, one drachm.
Syrup of Ginger, a sufficiency to form an electuary, of which take the bulk of a walnut at bed-time.

An habitual attention to the removal of costiveness by instituting a regular custom of periodically soliciting an evacuation by voluntary and persevering efforts, will powerfully aid the beneficial effects of the other means we employ. The morning is the proper time for the attempt; and the trial should be prosecuted during at least fifteen minutes, if the peristaltic be not earlier excited to adequate motion. Perhaps a week may be unavailingly employed in this endeavour, but the proposed effect will probably be attained within a month: one month has indeed in numerous instances fully established an habitual call to intestinal evacuation, under circumstances that previously required the almost daily use of aperient medicines.

Where dyspepsia is occasioned by defective biliary secretion, and is combined with a diseased state of the liver, spleen or biliary ducts, the stools indicating a want of due mixture of bile with them, we should employ the submuriate of mercury. A pill containing about two grains of this may be taken every third night, succeeded the next morning by an aperient draught composed of one ounce and a half of infusion of senna, with two or three drachms of sulphate of magnesia.

For the removing of cardialgia and vomiting which attend on dyspepsia, the application of a blister over the stomach often proves serviceable. In such cases, blisters invigorate the exertions of the arterial and lymphatic vessels of the skin, produce an increase of insensible perspiration and of cutaneous absorption, and augment the action of the stomach, and consequently its power of digestion.

To accomplish the third intention of restoring the tone of the stomach, the loss of which is to be considered as the chief and immediate cause of dyspepsia, we are to employ such medicines as operate directly on this organ, and such remedies, and other means, as have a tendency to strengthen the system in general.

The medicines best calculated to restore the tone of the stomach are aromatics and astringent bitters,* as likewise the

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Vel,

11. ℞ Tinct. Rhei, f. ℥vj. pro dos.

Vel,

12. ℞ Pulv. Rhei, ℈j.
—— Zingib. gr. v.
Magnesiæ, ℥ss. M.
ft. Pulvis, pro re nata sumendus.

* 13. ℞ Infus. Gentian. C. f. ℥jss.
Tinct. Card. C. f. ℥ij.
—— Myrrh. f. ℥j. M.
ft. Haustus, bis terve de die adhibendus.

Vel,

14. ℞ Infus. Rad. Calumb. f. ℥x.

Or,

11. Take Tincture of Rhubarb, six drachms for a dose.

Or,

12. Take Powdered Rhubarb, one scruple.
———— Ginger, five grains.
Magnesia, half a drachm.
Mix them, and take this powder when necessary.

* 13. Take Compound Infusion of Gentian, one ounce and a half.
———— Tincture of Cardamon, two drachms.
Tincture of Myrrh, one drachm.
Mix them. This draught is to be given three times a day.

Or,

14. Take Infusion of Calumba Root, ten drachms.

cinchona bark,* the mineral acids, and chalybeates.† The latter, in particular, are of eminent service in an impaired or capricious

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Tinct. Cascaril.
—— Cort. Aurant, āā f. ʒj. M.

ft. Haustus.

Vel,

15. ℞ Quassiæ, ʒij.
Aq. Fervent. f. ʒv.
Colat. adde
Tinct. Cascaril.
—— Card. C. āā f. ʒss. M.

Capiat æger cochl. iij. ter in die.
Adde pro re nata
Acid Sulph. Dilut. ♏ xiij.

Vel,

16. ℞ Infus. Gentian. C. f. ʒv.

Tinct Cinnam. C. f. ʒj.

—— Lavand. C. ʒj. M.

ft. Mistura.

Vel,

17. ℞ Rad. Gentian. Contus. ʒss.

—— Calam. Aromat. C.
Cardam. Sem. Contus. āā ʒiij.

Cort. Aurant. Sic. C. ʒij.
Vin. Alb. Hispan. Oij. Infundantur per dies octo.

Hujus Infusi capiat cochl. ij. bis quotidie.

* 18. ℞ Decoct. Cinchonæ, f. ʒjss.

Tinct. Calumb. f. ʒij.
—— Myrrh. f. ʒj. M.

ft. Haustus, ter in die sumendus.

Vel,

19. ℞ Pulv. Cinchonæ, ʒj.

Aq. Cinnam. f. ʒjss.

Tinct. Gentian. C. ʒij.

Acid. Sulph. Dilut. ♏ xiij. M.

ft. Haustus.

Vel,

20. ℞ Infus. Cinchonæ, f. ʒv.

Tinct. ejusd. C.
—— Card. C. āā f. ʒss. M.

Sumat cochl. larg. iij. ter in die.
Adde pro re nata
Acid. Sulp. Dilut. ♏ xiij.

† 21. ℞ Tinct. Ferri Muriat. f. ʒss.
♏ x.—xvj. ter die sumendæ in quovis vehiculo.

Tincture of Cascarilla,
———— of Orange Peel, of each one drachm.
Mix them for a draught.

Or,

15. Take Infusion of Quassia, five ounces.
Tincture of Cascarilla,
Compound Tincture of Cardamon, of each half an ounce.
Of this mixture let the patient take three table-spoonsful thrice a day, adding occasionally twenty drops of Diluted Sulphuric Acid.

Or,

16. Take Compound Infusion of Gentian, five ounces.
———— Tincture of Cinnamon, one ounce.
———————— Lavender, one drachm.
Mix them. The dose the same as the former.

Or,

17. Take Gentian Root, bruised, half an ounce.
Sweet Flag Root, sliced,
Cardamon Seeds, bruised, of each three drachms.
Orange Peel dried, two drachms.
White Wine, two pints.
Infuse them for eight days, and let the patient take two table-spoonsful twice a day.

* 18. Take Decoction of Peruvian Bark, one ounce and a half.
Tinct. of Calumba, 2 drachms.
—— Myrrh, one drachm.
Mix them, and take this draught thriceaday.

Or,

19. Take Powder of Peruvian Bark, one drachm.
Cinnamon Water, one ounce and a half.
Compound Tincture of Gentian, two drachms.
Diluted Sulphuric Acid, twenty drops.
Mix them for a draught.

Or,

20. Take Infusion of Peruvian Bark, five ounces.
Compound Tincture of thesame,
————————Cardamons, of each half an ounce.
Of this mixture 3 large spoonsful may be taken thrice a day, adding occasionally, of Diluted Sulphuric Acid, twenty drops.

† 21. Take Muriated Tincture of Iron, fifteen to twenty-four drops thrice a day in any vehicle.

appetite, and weakness of the assimilating organs, irregular digestion, flatulent distension of the abdomen, anxiety about the præcordia, difficult respiration from sympathy with the stomach, and occasional vomiting of viscid mucus.

Besides the vegetable bitters that we have long been accustomed to, two others have very lately been recommended and brought forward as deserving our notice. The one is the humulus lupulus, or common hop, different preparations of which, such as the powder, extract, and tincture, are to be procured at the shops of many druggists; the other is the radix rhataniæ, or rhatany root. This last, we are told by Dr. Reece,* who seems to have been the first to give it notoriety, has been found to invigorate

* See his Treatise on the Rhadix Rhataniæ.

Vel,

22. Aq. Chalybeatæ.

Vel,

23. ℞ Vin. Ferri, f. ℥ij.
Infus. Gentian. f. ℥jss.

Tinct. Cascaril. f. ℥j. M.

Pro haustu, bis terve in die sumendo.

Vel,

24. ℞ Pulv. Myrrh. ℥ss. Solve in
Spirit. Cinnam. f. ℥ij. et adde

Aq. Pimentæ, f. ℥j.
Ferri Sulphat. gr. iij.—vj.

Potassæ Subcarbon. gr. x. M.

ft. Haustus, ter die sumendus.

Vel,

25. ℞ Extract. Cinchonæ,
——— Gentian. āā ℥j.

Ferri Sulphat. ℥ss.
Pulv. Myrrh. ℥j.
Syrup. Zingib. q. s. M.

Fiant pilulæ lx. quarum iij. sumat bis terve in die cum Infusi Cascarillæ Cort. f. ℥ij.

Vel,

26. ℞ Pulv. Cinchonæ, ℥j.

Pulv. Myrrh. ℥ij.
—— Cinnam. C. ℥ss.

Ferri Subcarbonat. ℥ij.

Syrup. Cort. Aurant. q. s. M.

ft. Electuarium, cujus quantitatem juglandis sumat ter in die cum Infus. Quassiæ, ℥ij.

Or,

22. Chalybeate Waters.

Or,

23. Take Wine of Iron, two drachms.
Infusion of Gentian, one ounce and a half.
Tincture of Cascarilla, one drachm.

Mix them for a draught, to be taken twice or thrice a day.

Or,

24. Take Myrrh, half a drachm
Dissolve it in Spirit of Cinnamon, two drachms; and add
Pimento Water, one ounce.
Sulphate of Iron, from three to six grains.
Subcarbonate of Potass, ten grains.

Mix them, and let this draught be taken three times a day.

Or,

25. Take Extract of Peruvian Bark,
——— Gentian, of each one drachm.
Sulphate of Iron, half a drachm.
Powdered Myrrh, one drachm.
Syrup of Ginger, a sufficiency to form the mass, out of which sixty pills are to be made, of which three are to be taken twice or thrice a day, washing them down with about two ounces of an Infusion of Cascarilla Bark.

Or,

26. Take Powder of Peruvian Bark, one ounce.
Powder of Myrrh, two drachms.
Compound Powder of Cinnamon, half a drachm.
Subcarbonate of Iron, two drachms.
Syrup of Orange Peel, a sufficiency to form an electuary, of which the bulk of a walnut may be taken three times a day, with two ounces of an Infusion of Quassia.

the digestive organs, produce a relish for food, and promote digestion. He further mentions, that it is more grateful to the palate than cinchona bark, and that he has found it to succeed better. This has not, however, been the case in the trials which I have made of it; neither has it answered the expectations of most others who have administered it. An aromatic tincture* of it seems to be its best preparation.

In cardialgia, gastrodynia, pyrosis, and such other complaints of the stomach, the oxyd of bismuth is a remedy which has been employed with considerable advantage in a variety of instances.† The proper dose is from three to ten grains, with about twenty-five grains of gum tragacanth, repeated three times a day. It will be best, however, to begin with a dose of only three grains, increasing it gradually. The remedy is perfectly safe as well as useful. In dyspeptic cases accompanied by gastrodynia, prussic acid has been reported by some practitioners to be a remedy of considerable efficacy, particularly where there has existed at the same time some disease in the heart.

As a diminution of the due quantity of gastric juice is sometimes a cause of dyspepsia, it may not be improbable that in such cases the symptom may be relieved by supplying the patient with the gastric liquor of those animals whose food is most similar to that of man. Dr. Scott, in a thesis published some years ago, makes mention, that an Italian physician, finding every thing else fail in a dyspeptic case, had recourse to the gastric liquor of brutes, which proved completely successful.

To strengthen the system, whereby the powers of the stomach will be made stronger, the patient should take daily exercise on horseback, which will be preferable to walking, as being less fatiguing; he should breathe a pure, dry, and temperate air, rise early every morning, go soon to bed at night, lead a temperate life, adapt his dress to the climate and changes of the weather, and bathe frequently in cold water.

The use of a tepid bath of about 96 or 98 degrees of heat for half an hour every other day for two or three months, has, in many instances, proved of great service to dyspeptic persons. Indeed it would be best to begin with tepid bathing, and so reduce the temperature gradually. Tepid bathing communicates heat to

† See Memoirs of the London Medical Society, vol. v.
— Medical Reports, by Dr. Bardsley.

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* 27. ℞ Rad. Rhatan. Contus. ℥ij.
Cort. Aurant. Sic. C. ℥ss.
—— Canel. Alb. C. ℥jss.
Spirit. Rectificat. Ten. Oij.
Digere per dies decem et cola.
Sit dosis cochl. ij. minima bis in die ex cyatho aquæ puræ.

* 27. Take Rhatany Root, bruised, two ounces. Orange Peel, dried, half an ounce.
Canella Bark, bruised, one drachm and a half.
Proof Spirit, two pints.
Infuse them for ten days, then strain off the liquor. The dose may be two tea-spoonsful twice a day in a glass of water.

the system, and it likewise stimulates it, and causes absorption more than exhalation.

The mind is to be amused at the same time that the body is employed; hence it is that mineral waters, and places of public resort, have always been found very efficacious in alleviating dyspeptic complaints. Mineral waters are indeed of themselves powerful remedies in cases of dyspepsia; but their efficacy is greatly increased by drinking them at the spring, where the patient's mind being constantly engaged by the company and a great variety of amusements, he is sure to receive both hope and entertainment. The advantages of air, exercise, particularly on horseback, and agreeable prospects, admirably coincide, in most cases, with the general curative effect of the spring itself.

Buxton water is found of considerable service in removing many of the symptoms of defective digestion and derangement of the alimentary organs consequent to a life of high indulgence and intemperance. A judicious use of this simple remedy, Dr. Saunders* observes, will often relieve the distressing symptoms of heart-burn, flatulency, and sickness; and if presevered in, will increase the appetite, render the secretions more regular, and improve the general health and spirits, that are so intimately connected with the functions of the digestive organs. A spontaneous diarrhœa is sometimes a consequence of its use at first; but it is more common, especially in habits where the action of the bowels is naturally sluggish, for costiveness to come on during a course of this water, which must be remedied by laxative medicines.

In dyspeptic affections, spasms of the stomach or intestinal canal, and similar disorders, great benefit is derived from a use of Bath water; but it ought to be persisted in for a considerable length of time. Sir George Gibbs bears ample testimony to the benefit derived by dyspeptic patients from both the internal and external use of the Bath waters, and Dr. Falconer observes in his Treatise on these waters, that every medical practitioner of the place must have seen instances of persons labouring under want of appetite, pain and spasms of the stomach and bowels, together with other symptoms of depraved digestion, and want of power in the proper organs to perform their functions, joined to a great degree of weakness both of the body and spirits, much relieved by a use of the Bath waters. Dyspepsia, foulness of the stomach, bilious vomiting, acidity, heart-burn, and spasmodic pains in any part of the alimentary canal, are complaints in which a use of Seltzar water affords likewise great relief.

Pyrmont water is another remedy which may be advantageously used in all cases of debility, where the constitution requires an active tonic, and which at the same time does not excite a permanent heat. It increases the secretion of urine, and sometimes

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*See his Treatise on Mineral Waters.

occasions a temporary eruption on the skin. It is of an agreeable though strongly acidulated taste, and emits a large portion of gas, which affects those who drink it with a sensation somewhat resembling that produced by intoxication. The dose must vary according to circumstances, and the nature of the patient's complaint, but, in general, the quantity to be taken ought not to exceed three pints per day.

If a person residing in a warm climate should labour under chronic weakness for any length of time, he will act prudently in removing to a colder one before the disease becomes inveterate, and lays the foundation of some dangerous complaint. If his circumstances or business will not admit of such a change, he ought then to remove to the coolest situation that can be procured; or, in preference to remaining on shore, he may sleep on board of some vessel; and as often as opportunities offer he should make short voyages, as wonderful recoveries have been effected by sea air in cases of this nature.

The diet in dyspepsia ought to be nutritive and generous, consisting chiefly of animal food, on account of the disposition to acescency; and it should be taken every three or four hours, and never exceed a few ounces at any one time. Moreover, due care is to be taken to masticate it properly, in order that it may be reduced by comminution and salival commixture to a semi-fluid state. Instead of fermented bread, the patient should eat biscuit with his food. No diluent fluids should be taken at his meals, nor until some time after each repast, lest the solvent property of the mixed saliva should thereby be diminished; nor should the quantity of fluid taken at once ever exceed half a pint, nor be repeated oftener than at intervals of three hours. About half an hour before swallowing the portion of aliment proposed, brisk friction should be performed with a flesh-brush over the region of the stomach during some minutes, and a similar operation may follow the meal.

A moderate use of wine, such as Madeira or Sherry, ought to be allowed: but should these disagree with the patient, and become acid on his stomach, weak brandy and water may be substituted for ordinary drink. Under no other circumstances should a use of ardent spirits be resorted to; as by an indulgence in them, a habit imperceptibly steals on, before the person is aware of the consequences to which it leads. By too free a use of spirituous liquors obstructions in the principal organs ensue, the nervous system becomes blunted and depraved to every feeling, the energies of the mind suffer, loss of memory takes place, a train of nervous disorders come on, and an attack of jaundice, dropsy, or consumption, at length terminates existence.

In this progress, even the passages to the stomach lose their feeling, become indurated and callous; and the organ itself, taking on the same state, has its digestion impaired, and becomes unfit to prepare nourishment for the body. Pure wine, in a moderate

quantity, gently stimulates, inceases the action of the heart and arteries, and augments the nervous energy over the whole body, communicates a serenity and ease of mind, a liveliness of imagination, and a powerful exertion of every faculty: but, on the other hand, if taken immoderately, these favourable appearances are changed, the powers of the nervous system are weakened, the mind is deranged, and in the end both motion and sensation are much impaired, if not lost.

In that species of chronic debility which is brought on by drinking spirituous or fermented liquors to excess, there is not much reason to expect a return to healthful vigour where the power of digestion is considerably destroyed; but in other cases, the person may probably recover his health by a prudent and gradual diminution of the quantity of spirits. In such a case, he should at first omit one-fourth of the quantity of spirit he has lately been accustomed to; and if in a fortnight his appetite increases, he should be advised to omit another fourth; but if he perceives that his digestion becomes more impaired, from the want of the usual quantity of spirituous potation, he should then be advised to continue as he is, and rather bear the ills he has, than risk the encounter of greater. Animal food, with or without spice, is at the same time to be recommended, as likewise the cinchona bark, with myrrh and steel between his meals. At night he may take half a grain or a grain of opium, with five or eight grains of rhubarb.

Various dyspeptic affections of the stomach are apt to arise in consequence of a stricture or strictures in the œsophagus, or tube through which the food is conveyed to it. In all such cases, a fair and sufficiently long trial should be made by the introduction, once or twice a day, of a bougie of a proper size, composed either of wax and oil spread on linen, or of the elastic gum, with the view of dilating, in a gradual manner, the strictured part of the tube. We should begin with a bougie of a moderate size, and, after a few days, lay it aside for one a little larger. Should the disease not yield to this means, it will be advisable to resort to the caustic bougie, managing it in the same manner as is recommended for the removal of strictures in the urethra. Some cases of stricture in the œsophagus are reported in Sir Everard Home's work,* which were successfully treated with caustic, having previously resisted all the other means which were adopted.

Nervous persons are apt to complain of atoms floating before the eyes, or what are termed muscæ volitantes: but for the treatment of these, I beg leave to refer to the succeeding disease.

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* See his Practical Observations, &c. vol. i.

HYPOCHONDRIASIS, OR HYPOCHONDRIAC AFFECTION.

THIS disease, known likewise by the name of low spirits, or the vapours, is a certain state of the mind along with dyspepsia, wherein the greatest evils are apprehended upon the slightest grounds, and the worst consequences imagined from any unusual feeling even of a trifling kind; and in respect to such apprehensions and feelings, there is always the most obstinate belief and persuasion.

Hypochondriasis bears a strong resemblance to dyspepsia; but there is this difference between them, that the former prevails at an advanced period of life, and is more an affection of the mind than of the body; whereas the latter occurs principally from the age of puberty to that of 35, and depends chiefly on debility induced by various causes. Hypochondriasis may, moreover, be distinguished from dyspepsia by the languor, listlessness, want of resolution and activity, fear of death, and suspicious disposition being always present, and by the dyspeptic symptoms being often absent, or when present, they are in a much slighter degree.

Men of a melancholic temperament, whose minds are capable of great attention, and whose passions are not easily moved, are at an advanced period of life most liable to be attacked with this disease; and when it has once taken place, it goes on increasing as life advances, being usually most troublesome in the autumnal and winter seasons: which accounts for more acts of suicide being committed at these times of the year than any other.

The English have been accused as the nation of all others which is addicted to suicide; and perhaps this proneness ought more reasonably to be attributed to an indulgence in unhappiness and domestication of misery, from trivial circumstances, than to the influence of fogs, or the physical effects of coal fires, as have been assigned by foreigners.

Hypochondriasis seems to depend on a loss of energy in the brain, or on a torpid state of the nervous system, induced by various remote causes, such as close and intense study, long and serious attention to abstruse subjects, the constant remembrance of some material loss or disappointment which has occurred, great anxiety of mind, leading an inactive, indolent, or sedentary life, immoderate venery, or a use of crude, flatulent, or unwholesome food, being guilty of great irregularity and intemperance, and by long-continued evacuations.

The affections of the abdominal viscerawith which this disease is usually complicated, have been often treated of as standing in the relation of causes, while, in reality, they should be arranged among its occasional symptoms. That such is really the case, is clearly proved by a consideration of the exciting causes of the disease, which operate upon the system through the medium of

the brain. These are the depressing passions, fear, grief, and despondency, habits of indolence quickly succeeding to a life of industry and employment, long-continued and excessive exertions of the intellectual faculties. The sympathetic derangements consequent on hypochondriasis, are not, however, confined to the abdominal viscera; for nothing is more common than to meet, in such cases, with palpitations of the heart, difficulty of respiration, and chronic cough.

Hypochondriasis and other nervous complaints are, through the medium of sympathy, scarcely less infectious (it is probable) than febrile diseases; and even persons naturally of a cheerful temper, by being long domesticated with those of a melancholy desponding cast, have been known to become decidedly and often deplorably dejected.

The hypochondriac affection is attended with inactivity, a want of resolution with respect to all undertakings, lowness and dejection of spirits, great despondency, and apprehension of evil upon the slightest grounds, and a dread of danger from any unusual feeling even of a trifling kind, together with flatulency in the stomach and bowels, acid eructations, costiveness, a copious discharge of pale urine, spasmodic pains in the head and other parts of the body, giddiness, dimness of sight, and palpitations. In short, it is attended with such a long train of symptoms, that it would fill many pages to enumerate them all, as there is no function or part of the body that does not suffer in its turn by its tyranny; the miserable patient indulges wild imaginations, and fancies that he labours under almost every disease; and with respect to these feelings and apprehensions, he entertains the most obstinate belief, being highly displeased if any attempt is made to reason with him on the absurdity of his persuasions.

There are few examples of hypochondriacal people who find themselves worse at night than in the morning: the generality of them, like most of those who are afflicted with any of the complaints styled nervous, are seemingly hurt by their sleep, little as it is; and the longer they happen to sleep the worse they are: they awake out of it with confusion, and do not come immediately to themselves; and when they do, they can think only of melancholy subjects, and feel the worst horrors of their disorder. This state continues till dinner, with very little abatement; after dinner they feel themselves a little revived; and at night the tide of their spirits returns, which being desirous to enjoy, and dreading their certain ebb when they lie down, they go late and with reluctance to bed.

In hysterical women the operations of the animal powers seem to be the most disturbed and perverted; but in men the mind is most affected; involuntary exclamations, faintings and convulsions of all sorts, being most common in women, and silent despair in men. Hence, perhaps, suicide occurs more frequently with men than among women.

As to the prognostic, the disease, if recent, is rather to be regarded as troublesome than dangerous; but if long continued, it is apt to produce scirrhi of the viscera, cachexy, dropsy, incurable melancholy, or madness.

On dissections of hypochondriacal persons, some of the abdominal viscera (particularly the liver and spleen,) are usually found considerably enlarged. In some few instances, effusion, and a turgescence in the vessels, have been observed in the brain.

The indications of cure in this disease seem to be,

1st, To excite the nervous energy which has been depressed, and that particularly by attending to the state of the mind.

2dly, To remove or alleviate the symptoms which serve to continue and aggravate the disease.

3dly, To strengthen the alimentary canal and promote the secretions.

To answer the first of these indications, the patient's attention is to be engaged and diverted to other objects than his own feelings; he is to be directed to vary the scene frequently by going from one place to another; to associate as much as possible with agreeable cheerful company; to engage in such pursuits as will afford him moderate exercise in the open air, which gardening, riding on horseback, and field sports, as hunting and shooting, are particularly calculated to do; and by all means to avoid absolute idleness; but in doing this, all application to former studies, especially professional ones, is to be forbid: entertaining books will, however, be serviceable, as assisting to divert the mind from itself. Gardening is a pursuit highly proper for hypochondriacs, as it will keep the mind alert and the body in exercise: such as live in the country should therefore engage in it. In cities or large towns where this healthy recreation cannot be enjoyed, no better substitute can be employed than that of fitting up an apartment as a work-shop. Working in a cool and free atmosphere would prove a deliverance from that chilliness which for above half of our year so miserably persecutes the tender, and it might act equally as a charm on the ruffled spirits.

Hypochondriasis is far from being a metropolitan disease, as the multiplicity of external objects, which in a large capital are continually giving a new direction to the current of thought, is of course unfavourable to the uniformity and self-absorption of the melancholy. A residence, therefore, even in a large city, which affords objects of interest and motives of exertion, ought to be recommended to hypochondriacal or nervous patients, in preference to the most healthy situation in the country, where there is not enough to rouse the sluggishness or fill the vacuity of the mind.

Compassion, and not raillery, is to be bestowed on the hypochondriac, as the firm persuasion which he entertains will not allow his feelings to be treated as imaginary, nor his apprehension of danger to be considered as groundless, however the physician may be of opinion that it is the case in both respects. To gain his confidence, it will be necessary to attend to his complaints, as if they

were all real: and to satisfy him, it will by all means be advisable to give him some kind of innocent medicine or placebo, changing it from time to time whenever he expresses any disappointment of relief.

In the absence of every other diversion, even the swallowing of medicine may be a source of amusement. The times for taking the different draughts, or doses, are so many epochs in the chronology of a hypochondriac, which by dividing, help to conquer the tedium of his day. However skeptical a physician may be with regard to the inherent or permanent qualities of any medicine, it is his duty, perhaps, to take advantage of the tide of opinion; and he may honestly make use of his patient's credulity, in order to relieve him from the pressure of his disease, and render the partial weakness of his mind instrumental to the general restoration of his corporeal strength.*

The complaints of hypochondriacs should be treated by the physician as of real existence; and from whatever cause they may arise, it is his province to employ his art to subdue it; nor to ruffle an irritable mind by unseasonable levity, or expose a morbid sensibility to insult and reproach.

From the slow evacuation of the stomach in melancholic temperaments, acidity often prevails in a high degree with hypochondriacs; to obviate which, and answer the second indication of cure, it will be necessary for the patient to make use of absorbents and alkalies, as advised under the head of Dyspepsia.

Vomiting, though sometimes employed, is by no means suited to this disease.

Costiveness, which is another frequent symptom in hypochondriasis, is to be obviated by instituting a regular custom of periodically soliciting an evacuation by voluntary and persevering efforts once or twice a day at certain hours: and until the desired intention can be established in this way, some gentle laxative may be taken occasionally, as mentioned under the head of Dyspepsia.

Harrowgate water may be used with a fair prospect of advantage in correcting the obstinate costive habit of body that accompanies hypochondriasis; and this habit, when removed by mineral waters, appears to be less liable to return than when only the resinous and drastic cathartics are employed.

Flatulency is another constant attendant, and is to be prevented by making use of carminatives, essential oils, and spices, formulæ of which will likewise be found under the head of Dyspepsia.

Besides these affections, hypochondriacs are apt to be troubled with spasmodic pains in the head and stomach: to relieve which, it may be proper to employ such medicines as æther, musk, and opium, either given separately or combined together.†

* See Essay on Nervous Diseases, by John Reid, M. D.

* 1. ℞ Spirit. Æther. Sulph. ♏ xx.—xxx. pro dos.

† 1. Take Spirit of Sulphuric Æther, from thirty to forty-five drops, for a dose.

Assafœtida, castor, camphor, valerian, volatile salts, salt and oil of amber, are medicines which are likewise much employed in the cure of the disease; and, therefore, when the patient loses a confidence in the one, we can readily substitute another, hypochondriacs being seldom satisfied unless they are liberally supplied with some drug or other. Various forms of these remedies will be found under the heads of Hysteria and Epilepsy.

Nervous people are apt to be troubled with what are termed muscæ volitantes (atoms flying before the eyes,) which, though harmless and slight, often excite alarm and apprehension on the part of such patients, and may be mistaken for amaurosis, or incipient cataract: but whenever the appearance of muscæ volitantes is unaccompanied with the sensation of a mist which more or less obscures the appearance of objects, we may safely conclude that it is not a symptom of cataract; and whenever this appearance is not accompanied with a fixed state of the pupil, it may be safely inferred that it is not a symptom of gutta serena.*

The plan or cure for these muscæ volitantes is, to relieve the mind from intense application and from objects of anxiety, to clear the bowels by a brisk purgative, and then to give volatile medicines. Local bleeding, or any other debilitating treatment, is commonly injurious.

In hypochondriasis, as well as in most other nervous diseases, it is too much the custom with many to addict themselves to a frequent and immoderate use of opium, in some form or other: but this remedy should be carefully shunned, unless on urgent occasions; for although it may afford some little relief for the present, it will ne-

* See Medico-Chirurgical Transactions of London, vol. v. Essay 18th.

Vel,

2. ℞ Misturæ Moschi, f. ℥iss.
Spir. Æther. Sulphur, ♏ xx. M.
ft. Haustus, ter in die sumendus.

Vel,

3. ℞ Infus. Gentian. C. f. ℥jss.
Tinct. Card. C. f. ℥ij.
Spirit. Æther. Sulphur. ♏ xxij.
Tinct. Opii, ♏ xj. M.
ft. Haustus.

Vel,

4. ℞ Spir. Carui, f. ℥ss.
Misturæ Camph. f. ℥v.
Spir. Æther. Sulph. f. ℥j.
Tinct. Opii, ♏ xxv.
——— Lavand. C. f. ♏ xxx.
ft. Mistura, cujus sumat. cochl. larg. ij. ter quaterve die.

Or

2. Take Musk Mixture, one ounce and a half.
Spirit of Sulphuric Æther, thirty drops.
Make them into a draught, to be taken three times a day.

Or,

3. Take Compound Infusion of Gentian, one ounce and a half.
———Tincture of Cardamoms, two drachms.
Spirit of Sulphuric Æther, thirty-five drops.
Tincture of Opium, sixteen drops.
Mix them for a draught.

Or,

4. Take Spirit of Caraway, half an ounce.
Camphor Mixture, five ounces.
Spirit of Sulphuric Æther, one drachm.
Tincture of Opium, forty drops.
Compound Tincture of Lavender, forty-five drops.
Mix them, and let two large spoonsful be taken three or four times a day.

vertheless, by a constant use, greatly add to the disease. The immediate effect produced by opium upon such as addict themselves to its use is, that with an increase of the frequency of the pulse the heat of the body is generally somewhat augmented, so as to produce very often flushings in the face; and from a depressed state, they become active and alert, with an exhilaration of spirits; but after the operation of the remedy is over, depression of mind ensues, the body is cold and heavy, and in this dull and indolent condition it remains until the dose is repeated.*

The peculiar power which the citric acid possesses of counteracting the noxious effects of opium, is deserving of attention by those who accustom themselves to a regular use of this drug; and it has indeed been recommended by some physicians, that with every dose of opium a proportion of the juice of lemons, or oranges, in the quantity of two ounces to the grain of opium, should be taken: by this means the uneasiness which the medicine often occasions will be prevented, its depressing consequences avoided, and the tendency to constipation obviated. To a very free use of the vegetable acids is ascribed the slight effect which opium produces on the Turks, and not to the influence of coffee, as has been alleged by some. These people, as well as others of the Eastern nations, are in the habit of drinking daily large quantities of sherbet, which is a liquor composed of the juice of lemons or oranges, mixed with water and sugar.

From the quantity of acid in the composition of the black drop, a preparation of opium now much used, it will often stay upon the stomach when other preparations of this drug will not; and a long continued use of it may perhaps be less injurious to the constitution, from the same cause. The original recipe for the black drop (see Dr. Armstrong's Practical Illustrations of Typhus) is given below.†

Many of those who labour under a lowness of spirits, have recourse to wine, or other fermented liquors, and what is still worse, to spirituous ones, in order to raise them. The momentary relief so obtained is much too dearly bought by the far greater languor which succeeds: and the necessity of increasing the quantity of these liquors, in order to obtain the same effect, irrecoverably ruins the health, and this in the most miserable manner, as has been noticed under the head of Dyspepsia.

It is remarked by the judicious writer‡ before alluded to, that the best way of attempting to conquer the vice of intemperance in another, especially when it has been induced (as very frequently is

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* See the Confessions of an English Opium Eater.

† Take half a pound of opium sliced, three pints of good verjuice, one ounce and a half of nutmegs, half an ounce of saffron. Boil these to a proper thickness; then add a quarter of a pound of sugar, and two spoonsful of yest. Set the whole in a warm place near the fire for six or eight weeks; then place it in the open air until it becomes like a syrup. Lastly, decant, filter, and bottle it, adding a little sugar to each bottle. These ingredients, when properly mixed, should yield about two pints of the strained liquor. One drop of it is supposed to be equal to three drops of the tinctura opii of the London Pharmacopœia.

‡ See Essay on Nervous Diseases, by John Reid, M. D. p. 101.

the case) by some permanent or weighty cause of sorrow, is to picture to the mind of the patient the agreeable change in his situation which would be likely to arise from an alteration in his mode of life, rather than to present to him those deeper shades which must successively ensue from a continuance of his ignominious servitude and habits of fatal indulgence. The latter, though the more common mode of endeavouring to effect the reformation of an unfortunate inebriate, is in general calculated only to confirm and aggravate the evil, by sinking his spirits lower, and in some instances, perhaps, converting the langour of dejection into the mental palsy of despair.

It is not easy to determine whether the continued use of opium or of strong fermented liquors is most detrimental to the human constitution: unluckily the victims who addict themselves to either are insnared by a habit which they find it impossible to relinquish, because the constitution, when habituated to a strong stimulus, becomes incapable of carrying on the functions of life without continual excitement, which of itself brings on debility and premature decay.

Grievous, however, as is the depression which takes place as the second effect of all fermented liquors, that which succeeds to the excitement produced by opium, in any shape, is still more intolerable. It is of course a task less difficult to refrain from the former than the latter, when the latter has been regularly applied to for temporary comfort or support, on a desertion or prostration of the spirits.

To answer the third indication of strengthening the alimentary canal, and promoting the secretions, a plaster of pix abietina, or of cumini, is to be applied to the abdomen; and chalybeates are to be employed, as advised under the head of Dyspepsia.

Mineral waters, particularly those of Bath and Tunbridge, have been used in hypochondriacal cases with infinite advantage to the patient, which perhaps may be attributed as much to the amusements and avocations accompanying the drinking of these waters at the spring, as to the tonic power they possess, from the small quantity of iron with which they are impregnated. Perhaps the elementary water, by favouring the excretions, may have a share in relieving the disease.

Bitters and astringents are generally supposed to be improper in hypochondriasis, because there is not a loss of tone, as in dyspepsia, but only a torpor, or want of activity. Chalybeates, however, may be advisable.

As a general stimulant, cold bathing may sometimes seem useful to the hypochondriac, as well as to the dyspeptic; but this does not often happen, as tepid bathing proves in general much more useful, from the rigidity of the solids which prevails. A bath of about 96 or 98 degrees of heat, used for half an hour once a day, or every other day, has in many instances proved of great service. Where a natural warm bath can be procured, a preference should be given to it.

The use of a warm bath is generally resorted to with decided advantage by hypochondriac patients as a remedy for wakefulness, or broken and untranquil sleep, even when they had previously tried all the medicinal and dietetic opiates, as well as other methods for producing the same effect, without obtaining the object of their wishes.

Frictions of the whole body every morning and evening for ten minutes or longer, with coarse flannel cloths, will be likely to prove beneficial; and so will be also bodily exercise. For the cure as well as prevention of hypochondriasis, and other nervous affections, there is no means better adapted than bodily exercise in the open air; and a man suffering under a fit of the vapours will often find that by riding or walking, particularly in agreeable company, he will be able to remove it. The load upon his mind may be exonerated and removed by the continued agitation of his body.

Walking, no doubt, is best adapted to a state of unimpaired health or vigour; but for the feeble and hypochondriacal, or those who are affected by any visceral obstruction or disease, riding on horseback is for the most part preferable to any other kind of exercise. Instances not unfrequently occur of persons with broken spirits and apparently ruined constitutions, in whom an unexpected restoration to strength and cheerfulness has been effected by regular and daily horse exercise, when almost every other method of recovery has been tried without any sensible advantage. Nearly to live on horseback will be a good prescription for all nervous as well as bilious patients.

A person often indolently bends under the burden of hypochondriacal indisposition, which a spirited effort would at first have removed; and on this account I would strongly recommend that those who are labouring under this distressing evil should be stimulated to gradual exertion of all their faculties, both bodily and mental.

The diet in hypochondriasis should consist of what is light, generous, and nutritive, avoiding what is apt to prove either acescent or flatulent; and, therefore, animal food will be the most proper. The stomach ought never to be overloaded; neither should it be suffered to remain perfectly empty. If a faintness is perceived at any time between meals, a bit of cake or biscuit may be taken with a glass of wine; which precaution will be the more necessary with those in high life, from the late hour at which dinner is usually served up. Port wine, Sherry, or good Madeira, properly diluted with water, may be used for ordinary drink, instead of malt liquors; but should these disagree with the stomach, water with a small proportion of brandy may be drank in their stead. Tea and coffee are improper articles of diet for hypochondriacs; but more particularly when taken very warm. For breakfast, cocoa, chocolate, and infusions of aromatic herbs and roots, such as balm, sage, and ginger, may be substituted instead of these.

ORDER III.

SPASMI, OR SPASMODIC DISEASES.

IRREGULAR or preternatural motions of the muscles or muscular fibres are characteristic of this order of diseases.

HYSTERIA, OR THE HYSTERIC DISEASE.

THIS complaint appears under such various shapes, imitates so many other diseases, and is attended with such a variety of symptoms which denote the animal and vital functions to be considerably disordered, that it is difficult to give a just character or definition of it; and it is only by taking an assemblage of all its appearances that we can convey a proper idea of it to others.

The disease attacks in paroxysms or fits. These are sometimes preceded by dejection of spirits, anxiety of mind, effusion of tears, difficulty of breathing, sickness at the stomach, and palpitations at the heart; but it more usually happens that a pain is felt on the left side, about the flexure of the colon, with a sense of distension, advancing upwards till it gets into the stomach; and removing from thence into the throat, it occasions by its pressure a sensation as if a ball was lodged there, which by authors has been called globus hystericus. The disease having arrived at this height, the patient appears to be threatened with suffocation, becomes faint, and is affected with stupor and insensibility; while at the same time the trunk of the body is turned to and fro, the limbs are variously agitated, wild and irregular actions take place in the alternate fits of laughter, crying, and screaming; incoherent expressions are uttered, a temporary delirium prevails, and a frothy saliva is discharged from the mouth. The spasms at length abating, a quantity of wind is evacuated upwards, with frequent sighing and sobbing, and the woman recovers the exercise of sense and motion without any recollection of what has taken place during the fit; feeling, however, a severe pain in her head, and a soreness over her whole body.

In some cases there is little or no convulsive movement, and the person lies for some time seemingly in a state of profound sleep, without either sense or motion.

Hiccup is a symptom which likewise attends in some instances on the hysteric disease; and now and then it happens that a fit of hysteria consists of this alone. In some cases of this nature it has been known to continue for two or three days; during which it frequently seems as if it would suffocate the patient, and proceeds gradually weakening her, till it either goes off, or else occa-

sions death by suffocation: but this last is extremely rare. Besides hiccup, other slight spasmodic affections sometimes wholly form a fit of hysteria, which perhaps continue for a day or two, and then either go off themselves, or are removed by the aid of medicine.

In some cases the patient is attacked with violent pains in the back, which extend from the spine to the sternum, and at length become fixed upon the region of the stomach, being evidently of a spasmodic nature, and often prevailing in so high a degree as to cause clammy sweats, a pale cadaverous look, coldness of the extremities, and a pulse hardly perceptible.

Hysteric affections occur more frequently in the single state of life than in the married, and most usually between the age of puberty and that of thirty-five years; and they make their attack oftener about the period of menstruation than at any other.

They are readily excited in those who are subject to them by passions of the mind, and by every considerable emotion, especially when brought on by surprise: hence sudden joy, grief, fear, &c. are very apt to occasion them. They have also been known to arise from imitation and sympathy.

Women of a delicate habit, and whose nervous system is extremely sensible, are those who are most subject to hysteric affections; and the habit which predisposes to their attacks is acquired by inactivity and a sedentary life, grief, anxiety of mind, late hours, dissipation, a suppression or obstruction of the menstrual flux, excessive evacuations, and the constant use of a low diet, or of crude unwholesome food. The disease is sometimes met with in the more delicate of the male sex.

Hysteria differs from hypochondriasis in the following particulars, and by paying attention to them we may always readily distinguish between them. Hysteria attacks the sanguine and plethoric; comes on soon after the age of puberty; makes its onset suddenly and violently, so as to deprive the patient of all sense and voluntary motion; is accompanied with the sensation of a ball rising upwards in the throat, so as to threaten suffocation; is attended usually with much spasmodic affection; is more apt to terminate in epilepsy than in any other disease; and on dissection its morbid appearances are confined principally to the uterus and ovaria.

The reverse happens in hypochondriasis. It attacks the melancholic; seldom occurs till after the age of thirty-five; comes on gradually; is a tedious disease, and difficult to cure; exerts its pernicious effects on the membranous canal of the intestines, as well by spasms as wind; is more apt to terminate in melancholy or a low fever than in any other disease: and on dissection exhibits its morbid effects principally on the liver, spleen, and pancreas, which are often found in a hard, scirrhous, or other diseased state.

Another very material difference might be pointed out between

these two diseases, which is, that hysteria is much relieved by advancing in age, whereas hypochondriasis usually becomes aggravated.

The two diseases have often been confounded together; but, from duly considering the foregoing circumstances, it appears that a proper line of distinction should be drawn between them.

The hysteric passion likewise differs from syncope, as in this there is an entire cessation of the pulse, a contracted face, and a ghastly countenance; whereas in the uterine disorder there is often something of a colour, and the face is more expanded; there is likewise a pulse, though languid; and this state may continue two or three days, which never happens in syncope.

It also differs from apoplexy, in which the abolition of sense and voluntary motion is attended with a sort of snoring, great difficulty of breathing, and a quick pulse; which do not take place in hysteric cases.

It differs from epilepsy, in that this is supposed to arise in consequence of a distension of the vessels of the brain; whereas in hysteria, the spasmodic and convulsive motions arise from a turgescence of blood in the uterus, or in other parts of the genital system. Hysteria may be distinguished from epilepsy by the globus hystericus, by the great flow of limpid urine, by the sudden transitions from laughing to crying, and by the fear of death preceding and succeeding to the paroxysm.

However dreadful and alarming an hysteric fit may appear, still it is seldom accompanied with danger; and the disease never terminates fatally, unless it changes into epilepsy or mania, or the patient is in a very weak reduced state.

In the cure of hysteria two indications are to be attended to.

The first is to allay the spasmodic symptoms which constitute the fit; and

The second, to lessen the excitability of the nervous system, and strengthen the whole frame during the intermissions of the paroxysms.

The first of these indications is to be answered by bleeding, if the patient is young and plethoric, the pulse full, and the attack quite of a recent nature; but in weak and delicate constitutions, or where the disease has been of long standing, we should never have recourse to this operation.

During the fit it will be the safest practice to rouse the patient by applying burnt feathers, assafœtida, or volatile salts or spirits, to the nose; by rubbing the temples with æther, and by putting the feet into warm water. Dashing cold water over the extremities and face is sometimes attended with a good effect.

In case of costiveness, a laxative clyster, with an addition of assafœtida or castor, may be thrown up into the intestines. Where the fit continues for any length of time, I have seen very speedy and effectual relief afforded by administering clysters composed of

turpentine.* We may at the same time apply a small blister to the inside of each leg. During the fit, due care is to taken that the patient sustains no injury from the violence of her struggles.

As soon as she is perceived to be capable of swallowing, some antispasmodic, as assafœtida, castor, ammoniated tincture of valerian, camphor, æther, &c., should be given to her frequently. Such medicines may either be administered separately, or be combined together, as in the formulæ below.† In those cases where the spasms are very violent and the fit of long duration, opium may be employed in addition to other antispasmodics. In common cases it will, however, be best to avoid its use, as it seldom fails to leave the patient remarkably low, particularly if long continued.

In cardialgic paroxysms of the hysteric kind, the liquor potassæ subcarbonatis, in doses of twenty drops, frequently repeated, has been found an excellent palliative remedy, and may therefore be prescribed.

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* 1. ℞ Ol. Terebinth. f. ℥iij.
Mucilag. Gum. Acac. f. ℥ss.

Misceantur bene simul in mortario, et adde
Decoct. Avenæ, f. ℥xi.
ft. Enema.

† 2. ℞ Misturæ Assafœtid. f. ℥vj.
Tinct. Valerian. Ammon. f. ℥ij.
Spir. Æther. Sulphuric. f. ℥j. M.

ft. Mistura, cujus sumat ægra cochl. ij. larg. sextis horis.

Vel,

3. ℞ Tinct. Valerian. Ammon. f. ℥j.
Spirit. Lavand. C. f. ℥ij.
—— Cinnam. f. ℥iij.
Mistur. Camph. f. ℥vj. M.

ft. Mistura, capiat cochl. ij. larg. pro dos. ter quaterve in die.

Vel,

4. ℞ Aq. Cinnam. f. ℥ jss.
Tinct. Castor. f. ℥j.
Spirit. Ammon. Fœtid. ♏ xiv.
—— Æther. Sulphuric. ♏ xx. M.

ft. Haustus, 4ta aut 6ta quaq. hora sumen.

Vel,

5. ℞ Spirit. Ammon. Fœtid. ♏ xv.—xx. pro dos.

Vel,

6. ℞ Spirit. Æther. Sulphuric. ♏ xx.—xxx. in quovis vehiculo.

* 1. Take Oil of Turpentine, 3 drachms.
Mucilage of Gum Acacia, half an ounce.
Mix them well together in a mortar, and add Thin Gruel, eleven ounces, for a clyster.

† 2. Take Mixture of Assafœtida, 6 ounces.
Ammoniated Tincture of Valerian, two drachms.
Spirit of Sulphuric Æther, one drachm.
Of this mixture the patient may take two table-spoonsful every six hours.

Or,

3. Take Ammoniated Tincture of Valerian, one drachm.
Compound Spirit of Lavender, two drachms.
Spirit of Cinnamon, 3 drachms.
Camphor Mixture, six ounces.
Mix them, and let the dose be two table-spoonsful three or four times a day.

Or,

4. Take Cinnamon Water, one ounce and a half.
Tincture of Castor, one drachm.
Fetid Spirit of Ammonia, twenty-two drops.
Spirit of Sulphuric Æther, thirty drops.
Mix them for a draught, to be taken every four or six hours.

Or,

5. Take Fetid Spirit of Ammonia, from twenty-two to thirty drops for a dose.

Or,

6. Take Spirit of Sulphuric Æther, from thirty to forty-five drops, in any vehicle.

The second indication is to be answered by giving medicines, during the intermissions of the paroxysms, to strengthen the system, such as the cinchona bark, and other bitters, with the sulphuric acid, and chalybeates; proper formulæ of which have been inserted under the head of Dyspepsia; but if more agreeable to the practitioner, those mentioned here* may be substituted.

Mineral waters are found to be very efficacious in hysteric affections, and their powers may be greatly increased by proper exercise, particularly riding on horseback, together with early rising, a generous nutritive diet, cool dry air, and cold bathing.

In addition to these, the mind is to be kept constantly easy and cheerful, and, if possible, to be always engaged in some agreeable and interesting pursuit; for which reason watering-places are well adapted for those who are subject to hysteric affections, and particularly where they have taken their origin from grief, anxious thoughts, or other distresses of the mind.

If the stomach is affected at any time with crudities or bile, so as to excite nausea, a gentle emetic may be taken to remove it; or if there is a tendency to costiveness, it may be obviated by some gentle laxative, as advised under the head of Dyspepsia.

When hysteric affections arise from a suppression or obstruction of the menses, these evacuations must again be promoted by adopting the means recommended under those particular heads.

Hysterical women are often afflicted with slight spasmodic affections in various parts of the body, and particularly with cramps, which are most apt to seize them in bed, and when asleep. In mild cases of this nature, immersing the feet and legs in warm water will often be sufficient to remove them; but where the spasms are violent, and of some duration, we must attempt the cure by opiates, musk, æther, camphor, &c. internally, and by the warm bath and frictions with anodyne liniments externally.—See Tetanus.

In those cases where the stomach becomes affected with cramp, we must have recourse to considerable doses of æther combined

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* 7. ℞ Ferri Subcarbonat. gr. vj.
Extract. Cinchonæ, ℈j.

Syrupi, q. s. M.
ft. Bolus, bis in die sumendus, cum Infus. Quassiæ, f. ℥ij.

Vel,

8. ℞ Extract. Cinchonæ,
Pulv. Myrrh. ää ℈j.

Ferri Sulphat. ℈ss.
Ol. Carui, ℥ v.
Syrup. Zingib. q. s. M.
Fiant pilulæ xxxvj., quarum ij. capiat ægra ter quaterve in die; superbibendo Infus. Gentian. C. f. ℥ij.

* 7. Take Subcarbonate of Iron, 6 grains.
Extract of Peruvian Bark, one scruple.
Common Syrup, a sufficiency to form a bolus, which may be taken twice a day, washing it down with about two ounces of an Infusion of Quassia.

Or,

8. Take Extract of Peruvian Bark,
Powdered Myrrh, of each one drachm.
Sulphate of Iron, half a drachm.
Oil of Caraway, eight drops.
Syrup of Ginger, a sufficiency to form the mass into thirty-six pills, of which the patient may take two, three or four times a day, washing them down with two ounces of the Compound Infusion of Gentian.

with opium.* Its external region may likewise be anointed with a liniment of the same nature.† If the feet are cold, bottles filled with warm water should be applied to them. Throwing up an emollient clyster combined with the oleum terebinthinæ into the intestines may also be proper, particularly where costiveness accompanies the spasmodic affection of the stomach.

To lessen the irritability or excitability of the system, and produce permanent effects, some physicians have recommended a use of antispasmodics along with tonics. The undermentioned formulæ‡ may be advised on the occasion, the patient washing them down with a little valerian tea.

From the great disposition of the stomach to acescency in this disease, as well as in hypochondriasis, a diet chiefly of animal food will be most proper. Wine diluted with a sufficient quantity of water should be preferred to all other liquors for common drink.

EPILEPSIA, OR EPILEPSY.

THIS disease consists in a sudden deprivation of the senses, accompanied with a violent convulsive motion of the whole body.

It attacks by fits, which after a certain duration go off, leaving the person most commonly in his usual state: but sometimes a considerable degree of stupor and weakness remains behind, parti-

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* 9. ℞ Aq. Cinnam. f. ℥ j.
Spir. Æther. Sulphuric. f. ℥j.
—— Carui, f. ℥ss.
Tinct. Opii, ♏ viij.
—— Castor. f. ℥ss.
ft. Haustus, ter quaterve die capiendus.

† 10. ℞ Spirit. Camphoræ, f. ℥ij.
Tinct. Opii, f. ℥ss.
Spirit. Æther. Sulphuric. f. ℥iij. M.
ft. Embrocatio.

‡ 11. ℞ Moschi, gr. vi.
Camphoræ, gr. iij.
Extract. Cinchon. ℈ss.
Syrup. q. s. M.
ft. Bolus, bis terve die sumendus.

Vel,

12. ℞ Pulv. Myrrh.
Castor. āā ℥j.
Ferri Sulphat. ℈j.
Extract. Anthemidis, ℥ss.
Ol. Succin. ♏ v.
Syrup. Simpl. q. s. M.
Fiant pilul. xxxvj., quarum iij. capiat ægra mane et horâ decubitûs, cum cochl. ij. magnis Infusi Rad. Calumbæ.

* 9. Take Cinnamon Water, one ounce.
Spirit of Sulphuric Æther, one drachm.
——— Caraway, half an ounce.
Tincture of Opium, twelve drops.
——— Castor, half a drachm.
Mix them, and let the draught be taken three or four times a day.

† 10. Take Camphorated Spirit, 2 ounces.
Tincture of Opium, half an ounce.
Spirit of Sulphuric Æther, three drachms.
Mix them for an embrocation.

‡ 11. Take Musk, six grains.
Camphor, three grains.
Extract of Peruvian Bark, ten grains.
Syrup, a sufficiency to form a bolus, which is to be taken twice or thrice a day.

Or,

12. Take Powdered Myrrh,
Castor, of each one drachm.
Sulphate of Iron, one scruple.
Extract of Chamomile, half a drachm.
Oil of Amber, eight drops.
Common Syrup, a sufficiency to form the mass. Divide this into thirty-six pills, and let the patient take three night and morning, with 2 table-spoonsful of an Infusion of Calumba Root.

cularly where the disease has frequent recurrences. It is oftener met with among children than grown persons, and boys seem more subject to its attacks than girls. Its returns are periodical, and its paroxysms commence more frequently in the night than in the day, being somewhat connected with sleep. It is a disease sometimes counterfeited, in order to extort charity or excite commiseration.

The only disease with which epilepsy can be confounded, is hysteria, and from this it may readily be distinguished, by the foaming at the mouth, gnashing of the teeth, blackness of the countenance, &c., together with the speedy termination of the fit in sleep, and the absence of the usual symptoms of hysteria, such as the globus hystericus, palpitations of the heart, involuntary laughing or weeping, and other symptoms usually described in the histories of that disease.

Occasionally we meet with epilepsy in combination with mania.

Epilepsy is properly distinguished into sympathic and idiopathic; being considered as sympathic, when produced by an affection in some other part of the body, such as acidities in the stomach, worms, teething, &c.; and idiopathic, when it is a primary disease, neither dependent on, nor proceeding from any other.

The causes which give rise to epilepsy are blows, wounds, fractures, and other injuries done to the head by external violence, together with plethora of the vessels of the head, lodgments of water in the brain, tumours, concretions, polypi, and a deformity in the shape of the bones in any interior part of the skull. Epilepsy has also been known to arise from an affection of the spinal marrow; and it is to inflammation in that part, of a more chronic form, that those shaking palsies, which are attended with pain, have been imputed. Violent affections of the nervous system, sudden frights, fits of passion, great emotions of the mind, frequent intoxications, acute pains in any part, worms in the stomach or intestines, teething, the suppression of some long-accustomed evacuation, too great emptiness or repletion, and poisons received into the body, are causes which likewise produce epilepsy. Sometimes it is hereditary, and at others it depends on a predisposition arising from a mobility of the sensorium, which is occasioned either by plethora or a state of debility.

We are told by Dr. Parry,* that whatever may be the primary cause of epilepsy, it usually depends immediately on excessive impetus of blood in the vessels of the brain.

An attack of epilepsy is now and then preceded by a heavy pain in the head, dimness of sight, noise in the ears, palpitations, flatulency in the stomach and intestines, weariness, and a small degree of stupor, and in a few cases there prevails a sense of something like a cold vapour or aura rising up to the head; but it

* See his Elements of Pathology and Therapeutics.

more generally happens, that the patient falls down suddenly without much previous notice; his eyes are distorted or inverted, so as that only the whites of them can be seen; his fingers are closely clenched; his limbs and the trunk of his body, particularly on one side, are much agitated; he foams at the mouth, and thrusts out the tongue, which often suffers great injury from the muscles of the lower jaw being also affected; he loses all sense of feeling, and not unfrequently voids both urine and fæces involuntarily.

After a continuance of the convulsions for some time, they abate gradually, and the patient continues for a short period in a state of insensibility, but on coming to himself, feels very languid and exhausted, and retains not the smallest recollection of what has passed during the fit.

When the disease proceeds either from tumours, polypi, concretions, or a deformity in the bones of the skull, the case is hopeless. When it arises from an hereditary disposition, or comes on after the age of puberty, or where the fits recur frequently and have become habitual, or are of long duration, it will be very difficult to effect a cure; but when it attacks at an early age, and is occasioned by worms or any accidental cause, it may in general be removed. In some cases it has been entirely carried off by the recurrence of a fever, or by the appearance of the menses, or of a cutaneous eruption. It has been known to terminate in apoplexy, and in some instances to produce mental derangement, or a loss of the powers of the mind, and so to end in idiotism.

Epilepsy has been perceived to disappear suddenly about the age of puberty where it has attacked children of five or six years old, and where no treatment has had any effect. The number of fits are always increased by parturition, and by every other thing which has a tendency to debilitate the system.

The appearances usually to be observed on dissection are, serous and sanguineous effusion, a turgid tense state of the vessels of the brain without any effusion, a dilatation of some particular part of the brain, excrescences, polypi, and hydatids adhering to it, obstructing its functions, and likewise ulcerations. In some instances the pituitary gland is found in a diseased state, even when every other part of the brain has appeared natural. In numerous dissections the spinal cord has been found more or less diseased.

In epilepsy the intentions of cure should vary according to the cause which occasions the disease.

When it is sympathic, and arises from worms, medicines possessed of the power of destroying or dislodging these vermin, ought to be employed. As an anthelmintic, the oil of turpentine has been found a very useful medicine in some cases of epileptic fits. It may be administered in the form of emulsion, prepared by diffusing the oil by means of honey or mucilage, in some strong aromatic water, and about half an ounce of this, containing a drachm

of the oil, may be taken three times a day in a teacupful of milk. When they proceed from teething, that part of the gum which appears to be inflamed should be deeply scarified, the body be kept open by laxative medicines or emollient clysters, and the feet be bathed in warm water. When cases occur without any symptom of direct pressure on the brain, and there is occasional sickness attended with flatulency, disturbed sleep, and other marks of disordered digestion, either preceding or following epileptic paroxysms, it will be right, especially in the former case, to evacuate the contents of the stomach by an emetic, consisting of a solution of the sulphate of zinc in an aqueous infusion of ipecacuanha, and to repeat it in six, eight, or ten days, according to circumstances.* The dose must vary according to the age of the patient, and the different degrees of irritability of the stomach, as no general rule can apply to every case.

Afterwards, if the stomach should exhibit marks of weakness, light bitter infusions may be given, assisted by some active stimulant, as ammonia or oleum cajeputi.

When there is a great prevalence of acid from the imperfect digestion of vegetable food, soda, liquor potassæ, or liquor potassæ subcarbonatis, may be combined with the bitter.

If the bowels are confined at the same time, magnesia may be employed advantageously. On the contrary, if too much relaxed, which is seldom the case, cretaceous preparations may be resorted to.

If epilepsy appears to proceed from any suppressed discharge, in particular the bleeding piles, leeches should be applied to the hæmorrhoidal vessels together with fomentations, and we should at the same time administer aloëtic cathartics.

Where it attacks children of a costive habit, and seems to take its rise merely from a foulness of the bowels, active purgatives should be employed. A combination of the submuriate of mercury and jalap will be very proper.

If it arises from any stimulus, which by exciting pain occasions the complaint, this ought to be removed as quickly as possible. If it is a case of sympathic epilepsy, and is accompanied with the aura epileptica, we should then endeavour to destroy the part, either by cutting it out, or by applying caustic to it; and when these means cannot be adopted, we ought then to endeavour to correct the morbid affection in it, either by blisters or by inserting an issue in the part.

Should the disease seem to proceed from the partial division of a nerve, and it can be got at readily, we ought to cut through it in the same manner as in tetanus. Cutting off the communication with the brain has likewise been attempted by the application of ligatures upon the limb, above the part from which the aura arises. A case which was successfully treated in this way,

* See Dr. J. Clarke on the Diseases of Children.

is recorded by Mr. Adolphus T. Leoffler, Professor at Altena, in his Observations on Medicine and Surgery. An epileptic patient felt, on every attack, a sense of coldness at the sole of the foot, and which gradually ascended till it reached the head. It occurred to the Professor to make a strong ligature above the knee of the affected limb, before the cold sensation had proceeded so high. The method succeeded; and as often as he took this precaution sufficiently early, he prevented the attack from taking place.

In the idiopathic epilepsy, the cure consists in avoiding the occasional causes, and in removing or correcting those which predispose to it.

The occasional causes which are to be avoided, are over-distension, turgescence, intoxication, fits of passion, and all other emotions of the mind; and as the disease is confirmed by repetition and habit, so the avoiding frequent recurrences of it is of the utmost importance.

It is a fact well supported, that in some instances the disease has been found to continue from custom alone, after the original cause had long ceased to act. In such cases, our endeavours should be exerted to make nature discontinue this custom if possible. When an attack can be foreseen, no medicine, perhaps, under such circumstances, will be more likely to prevent an epileptic fit, than an emetic given about an hour before its approach. Removing to another country, and changing former habits and the manner of living, may likewise be serviceable in such cases.

If the predisposition to the disease has arisen from a plethoric state of the system, or from a turgescence in the vessels of the head, this is to be obviated by bleeding, both generally and topically, but more particularly the latter; by an abstemious diet and proper exercise, and by issues between the scapulæ, or a seton in the neck. These last may not only be supposed to be good remedies for obviating the plethoric state of the system, but may likewise be the means of determining occasional turgescences to such places, and therefore of diverting them, in some measure, from their action upon the brain. In those cases where, from frequent paroxysms, a morbid condition of the encephalon has prevailed, the insertion of a seton in the neck has been attended with a very happy effect.

In some dissections of those who have been destroyed by epilepsy, the spinal cord towards the upper part having been found now and then diseased, the insertion of issues on each side of the spinous processes of the cervical vertebræ (one of them near the occiput, the other about the commencement of the dorsal vertebræ,) has been attended with success after a failure of all other remedies. Some of the French surgeons have applied moxa to the spine, and this with considerable success, it is asserted.

In some cases of epilepsy, the patient lies in a comatose state after the paroxysm of convulsion has ceased, owing to a violent

determination of blood to the head, his breathing is stertorous with foaming at the mouth, and the pulse is full, hard, and beating one hundred in a minute. In such cases, bleed to the extent of twenty ounces or more, order cold applications to the forehead, temples, and head, and evacuate the bowels freely by a powerful dose of some active purgative, assisted by an enema of the same nature. If these means do not restore the patient to a state of sensibility, repeat the bleeding again, apply leeches to the temples, and a large blister to the neck, or between the shoulders.

Epilepsy is one of the diseases in which the digitalis has been found serviceable, but most so in those cases where a plethoric state or turgescence in the vessels of the head prevails. To produce, however, a permanent effect, the constitution must be kept under its influence for some weeks, by giving from half a grain to one grain of the powder, or from fifteen to thirty drops of the tincture, three or four times a day. Under the head of Mania, I have mentioned a severe case of epilepsy in a middle-aged married woman, accompanied with mental derangement, wherein, by administering the digitalis in the manner just noticed, and carefully guarding against the exciting cause (frequent intoxication), a complete cure was effected.

When the predisposition is owing to a state of debility, which is sometimes the case, we are to obviate and prevent its effects by recommending the patient to breathe a cool air, to make use of a generous nutritive diet, to take daily exercise adapted to his strength, particularly on horseback, and to go frequently into a cold bath: and besides adopting these steps, he may enter on a regular course of antispasmodic, astringent, and tonic medicines.

The antispasmodics in most general use are, valerian, castor, musk, æther, oil of amber, oleum cajeputæ, arnica montana, belladonna, hyoscyamus, digitalis, and opium, all of which may be given, as advised under the heads of Hysteria, Hypochondriasis, and Palsy, or as prescribed below.* A combination† of opium and valerian,

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* 1. ℞ Aq. Anethi, f. ℥jss.
Tinct. Valer. Ammon. ♏ xx.
—— Castor. f. ℥j.
Spirit. Æther. Sulphuric. ♏ xx. M.
ft. Haustus, bis terve die sumendus.

Vel,

2. ℞ Infus. Cort. Cascaril. f. ℥jss.
Tinct. Valerian. Ammon. ♏ xx.
—— Calumb. f. ℥ij.
—— Hyoscyami, ♏ xv. M.
ft. Haustus.

† 3. ℞ Moschi,
Castorei, ää gr. x.
Opii, gr. ss.

* 1. Take Dill Water, 1 ounce and a half.
Ammoniated Tincture of Valerian, thirty drops.
Tincture of Castor, one drachm.
Spirit of Sulphuric Æther, thirty drops.
Mix them for a draught, to be taken twice or thrice a day.

Or,

2. Take Infusion of Cascarilla Bark, one ounce and a half.
Ammoniated Tincture of Valerian, thirty drops.
Tincture of Calumba, 2 drachms.
————Henbane, 22 drops.
Mix them for a draught.

† 3. Take Musk,
Castor, of each ten grains.
Opium, half a grain.

or of opium and musk, will be likely to prove valuable remedies. In particular they should be given a short time before the expected return of the paroxysm, and be repeated at proper intervals, increasing the dose in a gradual manner, in proportion to the violence or frequent recurrence of the fits.

Where the disease depends upon a plethoric state, it would be highly improper to give opium; but where no plethora exists, and it seems to depend upon irritation or increased excitement, opium will prove a safe and powerful remedy. When given in a large dose, such as two grains in substance, or sixty or seventy drops in tincture, on the approach of a fit, it has been known to prevent it altogether; but should it even fail in this, it will infallibly be found to lessen its violence.

If the stomach rejects the internal use of opium, its external application may possibly be resorted to with much advantage, and it may likewise be employed in this way during the convulsions. The whole spine of the back may be moistened with tinctura opii; or a liniment, consisting of six grains of pure opium well triturated with a little prepared lard, may be rubbed in.

The astringent medicine most celebrated formerly in the cure of epilepsy, was the misletoe, or viscus quercinus. It was given in doses of from half a drachm to a drachm of the powder, or about an ounce of the infusion repeated twice a day. It was indeed looked upon by many more as an object of superstition than of real utility, and for many years past has experienced almost total neglect. A modern writer on epilepsy* speaks, however, highly in its favour, and has recited several cases which were radically cured by it.

As a tonic, the cinchona bark has been much employed in the cure of this disease. Its use seems, however, best adapted to those epilepsies which recur at certain periods, and which are without plethora; in which cases, if it be given in a considerable quantity, some little time before the expected recurrence, it will be very likely to prove serviceable. When taken for a constancy, it may be combined with valerian, &c., as below.†

* See Dr. Henry Fraser's Treatise on this Disease.

Confect. Rosæ, q. s. M.
ft. Bolus, 6ta quaq. hora capiendus.

Vel,

4. ℞ Ol. Succin. f. ℥ss.
Tinct. Opii, f. ℥ij. M.
Guttæ viginti bis terve in die sumendæ ex cyatho aquæ puræ.

† 5. ℞ Decoct. Cinchon. f. ℥x.
Tinct. ejusdem C. f. ℥ij.
—— Valerian. Ammon. f. ℥ss. M.
Pro haustu. ter in die sumendo.

Confection of Roses, a sufficiency to form a bolus, which may be taken every six hours.

Or,

4. Take Oil of Amber, half an ounce.
Tincture of Opium, 2 drachms.
Mix them, and take twenty drops twice or thrice a day in a little water.

† 5. Take Decoction of Peruvian Bark, ten drachms.
Compound Tincture of the same, two drachms.
Ammoniated Tincture of Valerian, thirty drops.
Mix these for a draught, to be taken thrice a day.

Metallic tonics having been found more powerful than the vegetable ones, have therefore been more generally employed. The preparations of iron most used are, the ferri sulphas, the ferrum ammoniatum,* and the ferri subcarbonas. Those of copper are the cuprum ammoniatum of the Edinburgh Dispensatory, and the cupri sulphas, which† may be given in small doses at first, repeated twice a day, increasing them gradually to as much as the stomach will bear. The pulvis stanni, and other preparations of tin, have likewise been used in the cure of epilepsy; but their effects seem doubtful.

The oxyd of zinc has been much extolled for its virtues in this disease. The dose is from one grain‡ to three, four, or five. It will always be the best way to begin with a single grain, repeated three or four times a day, and so to increase the dose gradually according to the effect it produces on the stomach.

The sulphate of zinc is another metallic tonic much recommended in this disease. We may give half a grain of it thrice a day, and increase the dose gradually.

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* 6. ℞ Ferri Ammoniat. gr. x.—xv.
Extract. Gentian. gr. x.
Syrup. q. s. M.
ft. Bolus, ter in die sumendus.
Vel,
7. ℞ Tinct. Ferri Ammoniat. ℥ xv. bis terve die in aquæ frigid. cyatho.

† 8 ℞ Cupri Ammoniat. gr. j.—iv.
Confect. Aurant. gr. x. M.
ft. Bolus, bis in die adhibendus.
Vel,
9. ℞ Cupri Sulphat. gr. iij.
Extract. Cinchonæ, gr. xij.
Opii, gr. ij.
Syrup. q. s. Misceantur bene in massam et in pilulas vj. divid. quarum capiat æger unam vel duas ter in die.
‡ 10. ℞ Zinc. Oxydi, gr. xij.
Pulv. Cinnam. Comp. gr. xv.
—— Cinchonæ, ʒj.
M. et in chartul. xlj. divide, quarum unam dos. sumat ter in die.
Vel,
11. ℞ Zinc. Oxydi, gr. xxiv.
Extract. Gentian. ʒss.
Syrup. q. s. M.
ft. Massa in pilulas xij. dividenda, quarum j. sumat mane et vespere cum Decocti Cinchonæ, ʒiss.

* 6. Take Ammoniated Iron, ten to fifteen grains.
Extract of Gentian, ten grains.
Syrup, a sufficiency to form a bolus, which may be taken thrice a day.
Or,
7. Take Ammoniated Tincture of Iron, twenty-two drops twice or thrice a day in a glass of water.
† 8. Take Ammoniated Copper, one grain, gradually increasing it to four grains.
Confection of Orange Peel, ten grains.
Make them into a bolus, to be taken twice a day.
Or,
9. Take Sulphate of Copper, three grains.
Extract of Bark, twelve grains.
Opium, two grains.
Syrup, a sufficiency. Divide the mass into six pills, of which one or two may be taken thrice a day.
‡ 10. Take Oxyd of Zinc, twelve grains.
Compound Powder of Cinnamon, fifteen grains.
Powder of Peruvian Bark, one drachm.
Mix them, and divide the Powder into twelve papers, of which take one dose three times a day.
Or,
11. Take Oxyd of Zinc, 24 grains.
Extract of Gentian, half a drachm.
Syrup, a sufficiency to form the mass, which divide into 12 pills, whereof two may be taken morning and evening, with one ounce and a half of a Decoction of Peruvian Bark.

Arsenic has likewise been employed in the cure of epilepsy with some success. It will be best administered in the form of solution, as recommended under the head of Intermittent Fever.

Some instances of the cure of epilepsy having occurred from an accidental use of mercury, this also has been proposed as a remedy.

The nitrate of silver* has been found to be a valuable medicine in the cure of epilepsy, even where the disease has been of many years' standing, and had resisted the powers of other medicines. Two cases of this nature are recorded in the Medical and Physical Journal.† It will be best to begin with a quarter of a grain thrice a day, which dose will be sufficient for an adult at first, but it may afterwards be gradually increased to one grain, or one grain and a half, and be taken in the form of a pill.

A singular occurrence attendant on a long course of this medicine is, that the skin of the patient has been known to contract a blue colour over the whole of the body‡ without there being the least disease of the heart, and where neither the circulation nor respiration were in the least affected. As the blood in these patients is always of the natural hue, it cannot be doubted, I think, with others, that the blue colour must be looked for in the reticula Malpighiana, in which it is produced by the nitrate of silver.

Certain stimulants, such as the tinctura cantharadis and oleum terebinthinæ, have lately been employed with considerable benefit in epilepsy. They produce irritation in certain other organs and parts of the body, particularly the urinary apparatus and alimentary canal, and it is during the continuance of this irritation, or determination to a distant part, that the brain obtains an immunity from the disease.

The oleum terebinthinæ, as just observed, has certainly been used in some cases of epilepsy with success,‖ as well as in a few other spasmodic diseases: the dose should be considerable to produce any effect, viz. one ounce for a delicate female, an ounce and a half for a robust female or small man, and about two ounces for a robust man. The best vehicle for it appears to be milk or gruel. The most proper time for administering it will be early in the morning, on an empty stomach.

It must be obvious, however, that this remedy can only be employed efficaciously in cases depending upon a cause unconnected

† See vol. i. p. 184, and vol. ii. p. 70.
‡ See Medico-Chirurgical Transactions, vol. vii. part i. p. 279.
‖ See Edinburgh Medical and Surgical Journal, No. 35.

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* 12. ℞ Argent. Nitratis, gr. iij.
Solve terendo in Aquæ Distillatæ, ℥ aliquot, et adde
Micæ Panis, q. s.
ft. Massa in pilulas viginti distribuenda. Unam vel duas sumat bis terve die.

* 12. Take Nitrate of Silver, three grains.
Dissolve it in a few drops of Distilled Water, then add
Crumb of Bread, a sufficiency to form a mass, which is to be made into twenty pills. The dose may be from one to two twice or thrice a day.

with diseased organization, and which is producing too great an excitement in the nervous system. In cases connected with diseased organization of the brain, the administration of turpentine would in all probability only aggravate the malady by exciting activity in the vessels of the morbid organ, which it should be the endeavour of the physician rather to arrest and tranquillize.

In some of the worst cases of epilepsy, in which the fits were long and violent, as well as frequent, throughout the course of the day, and where the disease had been of some standing, electricity has been found to render them weaker, and to reduce their number very materially in a short space of time. When other means fail to procure the desired effect, we ought therefore to have recourse to this remedy, or galvanism.

The diet in epilepsy should consist of such things as are light, nutritive, and easy of digestion, taking care to avoid whatever is apt to prove flatulent. During the intervals the patient is to keep himself as cheerful and tranquil as possible, carefully guarding against all violent passions or other emotions; and he should take care never to put himself in a hazardous situation, lest a fit should happen to attack him at that period.

When it is present, due care must be taken to prevent him from bruising himself in his struggles; and especially that he does not get his tongue between his teeth. Rubbing the nose, temples, and pit of the stomach with æther, may possibly help to abbreviate the fit by its action on the olfactory organ.

A smaller degree of epilepsy is where the sensibility and irritability remain, but there are spasmodic contractions of the muscles; hence we see many persons affected with twitchings of the face. There are also certain spasmodic pains that come on by paroxysms, which seem likewise of the epileptic kind.

When any of these arise as sympathic affections, they are only to be cured by removing the primary disorder upon which they depend; but where they take place independent of any other disease, they are to be treated in the manner just recommended to be pursued in the cure of epilepsy.

CATALEPSIS, or CATALEPSY.

Catalepsy is that state of the muscular system in which the patients, without fever, lose voluntary motion, and commonly the functions of the five senses, but preserve the mobility of the muscles, and keep the exact position wherein they are attacked, or arbitrarily placed by other persons.

The causes of catalepsy seldom appear to be local, but mostly general. There have been examples where plethora has produced this singular disorder, and where it has been removed by a spontaneous hæmorrhage. Suppressed catamenia, worms, and painful emotions of the mind, as terror, grief, disappointment, profound

meditation, anger, &c., have all occasioned attacks of catalepsy. Women are more frequently attacked by it than men. It sometimes changes into epilepsy, apoplexy, or melancholia, and has been known occasionally to terminate fatally in a few days.

We should, in treating the disease judiciously, endeavour to find out the occasional cause, and adapt our remedies accordingly. If supposed to proceed from plethora, we should unload the vessels by cupping at the back of the neck, cathartics, blisters, a seton, or an issue. When arising from causes of a debilitating nature, tonics joined with antispasmodics will be proper.

During the paroxysms, stimulating cataplasms may be applied to the palms of the hands and soles of the feet. Internally we may administer musk joined with volatiles,* &c.

CHOREA SANCTI VITI, OR DANCE OF ST. VITUS.

This disease is marked by convulsive actions, most generally confined to one side, and affecting principally the arm and leg. When any motion is attempted to be made, various fibres of other muscles act which ought not, and thus a contrary effect is produced from what the patient intended. It is chiefly incident to young persons of both sexes, but particularly those of a weak constitution, or whose health and vigour have been impaired by confinement, or by the use of scanty and improper nourishment; and makes its attacks between the age of ten and fifteen, occurring but seldom after that of puberty.

By some physicians it has been considered rather as a paralytic affection than as a convulsive disorder, and has been thought to arise from a relaxation of the muscles, which being unable to perform their functions in moving the limbs, shake them irregularly by jerks.

Chorea Sancti Viti is occasioned by various irritations, as teething, worms, acrid matter in the bowels, offensive smells, poisons, &c. It arises likewise in consequence of violent affections of the mind, as horror, fright, and anger. Occasionally it depends upon an excessive impulse of blood in the brain, and in such cases it is greatly aggravated by whatever increases the action of the heart, and of course relieved by means that lessen this. In many cases it is produced by general weakness and irritability of the nervous system, and in a few it takes place from sympathy at seeing the disease in others, or by imitating them; hence it not unfrequently

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* 1. ℞ Mistur. Moschi, ℥iij.
Aq. Pulegii, ℥ij.
Spirit. Ammon. Fœtid. ʒij.
Tinct. Valerian. ℥ss. M.
ft. Mistura, cujus sumat cochl. ij. secundis vel tertiis horis.

* 1. Take Musk Mixture, three ounces.
Pennyroyal Water, two ounces.
Fetid Spirit of Ammonia, two drachms.
Tincture of Valerian, half an ounce.
Mix them, and let two table-spoonsful be taken every two or three hours.

spreads in public seminaries, particularly among girls, if its progress is not checked by separation.

The fits are sometimes preceded by a coldness of the feet and limbs, or a kind of tingling sensation that ascends like cold air up the spine; and there is a flatulent pain in the left hypochondrium, with obstinate costiveness. At other times the accession begins with yawning, stretching, anxiety about the heart, palpitations, nausea, difficulty of swallowing, noise in the ears, giddiness, and pains in the head and teeth, and then come on the convulsive motions.

These discover themselves at first by a kind of lameness or instability of one of the legs, which the person draws after him in an odd and ridiculous manner, as if it was paralytic; nor can he hold the arm of the same side still for a moment; for if he lays it on his breast, or any other part of his body, it is forced quickly from thence by an involuntary convulsive motion. If he is desirous of drinking, he uses many singular gesticulations before he can carry the cup to his head, and it is forced in various directions, till at length he gets it to his mouth, when he pours the liquor down his throat with great haste, as if he meant to afford amusement to the by-standers. Sometimes various attempts at running and leaping take place, and at others the head and trunk of the body are affected with convulsive motions. The eye loses its lustre and intelligence, and the countenance is pale and expressive of vacancy; deglutition is occasionally performed with difficulty, and articulation is often impeded, and sometimes completely suspended. In the advanced periods of the disease, flaccidity and wasting of the muscular flesh take place, the consequence of constant irritation, of abated appetite, and impaired digestion.

In many instances the mind is afflicted with some degree of fatuity, and often shows the same causeless emotions, such as weeping and laughing, which occur in hysteria.

When the disease arises in children, it usually ceases again before the age of puberty, and in adults is often carried off by a change from the former mode of life. Unless it passes into some other disease, such as epilepsy, or its attacks are very violent, it is rarely attended with danger.

Where chorea arises in those of a weak irritable habit, and is wholly unconnected with any species of irritation, either of teething, worms, or acrid matter in the first passages, we should not employ evacuants, but have recourse to strengthening remedies, with the view of increasing the tone of the muscular system.

Cinchona bark in large doses, with the assistance of cold bathing, has often effected a cure; but the metallic tonics which have been advised under the head of Epilepsy, will be more likely to prove efficacious than those of the vegetable class. We have just grounds for believing that the liquor arsenicalis is a valuable and powerful medicine in the treatment of chorea, particularly if

conjoined with a few drops of tinctura opii; and indeed several cases of this disease, which were cured by this medicine, are recorded in vol. x. part i. of the Medico-Chirurgical Transactions of London: a few have also occurred in my own practice. To tonics we may join antispasmodics, such as opium, musk, and camphor, as prescribed under the same head. Hyoscyamus and belladonna are medicines sometimes employed in chorea with success, when all others have proved ineffectual, particularly the latter. When given to children, we may begin with about a grain daily, in divided doses, and gradually increase the quantity to one grain and a half.

During a use of these medicines, if costiveness prevails, it should be removed by some gentle laxative.

Should the disease resist these means, it probably may be carried off by strong electrical shocks directed through the whole body. Terror suddenly excited has been known to effect a cure.

The application of a perpetual blister to the os sacrum has, in addition to electricity, occasionally been found a valuable remedy. Dry cupping has in some instances been thought to have proved useful. In some cases of chorea, where from the frequency of the paroxysms a morbid condition of the brain has arisen, the insertion of a seton in the neck, and this kept open for a considerable time, has been attended with a happy effect.

Chorea has pretty generally been considered by systematic writers as a disease of debility, and this opinion has been almost universally adopted by practical physicians, inducing them to employ tonics, stimulants, and antispasmodics for its cure; but in many cases this has proved very difficult; and when not removed by the change which the system undergoes at the age of puberty, the disease has continued to harass the wretched sufferer ever afterwards. This fact being well established, we should undoubtedly regard the symptoms of chorea as sometimes depending on local irritation and not on debility; and in such cases they are to be obviated by removing the causes of irritation, by scarifying the gums, by expelling worms, or by a use of brisk purgatives. From some cases reported in the first number of the Edinburgh Medical and Surgical Journal, and which were received into the Royal Infirmary of that city, it appears that very complete cures were effected by the frequent exhibition of drastic purges, consisting of mercury and jalap. Irritation in the first passages no doubt had occasioned the chorea in these instances.

A modern writer tells us,* that having met with many cases of chorea which he treated in the usual way, but without success, he was induced to desert the practice, and to consider the disease in a different light from that in which it had been commonly viewed. He conceived that the debility and spasmodic motions hitherto so much considered, might not be the leading symptoms of the dis-

* See Observations on the Utility of Purgative Medicines, by Dr. Hamilton.

ease, but might depend upon previous and increasing derangement of health, as indicated by irregular appetite and constipation of the bowels. Under this impression he resolved to alter the mode of treating the disease, and began trying the effects of purgative medicines given regularly in moderate doses.

The success of the new practice established, he mentions, the justness of his opinion, and encouraged him to persevere with steadiness and activity. To procure a discharge of the indurated and fetid fæces, he found it necessary to employ active and strong purgatives in the confirmed stage of the disease, given in successive doses, in such a manner that the latter doses might support the effect of the former; but in the first stage of chorea, while the intestines yet retain their sensibility, and before the accumulation of fæces is great, gentle purgatives, repeated as the occasion may require, he experienced readily to effect a cure, or rather prevent the full formation of the disease. He mentions, that an occasional stimulus from purgatives will be requisite to support their due action and to restore their healthy tone, even after a regular appetite for food, a more intelligent eye and lightened countenance, cheerfulness, increasing aptitude for firmer motions, the restoration of articulation, and the power of deglutition, and a renovation of flesh and strength, succeed each other.

The oleum terebinthinæ in considerable doses has been administered with decided advantage in some cases of chorea; and probably this may be owing to its acting as a powerful cathartic.—See Tænia.

That a disordered state of the bowels is the only source of irritation capable of exciting chorea, cannot, I think, be admitted, although it may be allowed a frequent one. Other sources of irritation in any organ of the system may be equally capable of exciting these convulsive motions. In the treatment of the disease, our object should therefore be to ascertain what is the cause of the present disturbance, and to prescribe accordingly.

Some people, particularly women in a state of pregnancy, are very subject to spasmodic contractions of the joints, coming on periodically, and attended with very violent pain; for the removal of these, anodyne frictions appear to be the best remedy.

RISUS SARDONICUS, OR SARDONIC LAUGH.

IN this disease there prevails a fit of laughing, arising from no evident cause, which continues often in a violent degree for three or four nights, so as to prevent the patient from sleeping. By its duration in this way, great debility is produced; and frequency of the pulse and other febrile symptoms arise. It then either proves fatal by its violence, or goes off spontaneously.

Antispasmodics, sach as musk, castor, assafœtida, camphor, and æther, have usually been employed to remove the disease, but with-

out effect; so that we are unacquainted with any remedy that will prove effectual; and the spontaneous cessation of the fit is more to be trusted to than any aid from medicine. Large doses of opium might probably afford some relief.

TETANUS, OR CRAMP.

TETANUS is an involuntary and almost constant contraction of all or several of the muscles, while the senses remain perfect and entire. It may be considered as of two kinds: viz. symptomatic, the consequence of wounds; and idiopathic, occasioned by exposure to cold. In Europe the traumatic species is almost the only form in which tetanus occurs, whereas between the tropics the idiopathic tetanus is by no means unfrequent.

By practical writers, tetanic complaints have been distinguished into opisthotonos, emprosthotonos, and trismus, in allusion to the situation of the parts affected; but they are all evidently only different degrees of one and the same disease.

These affections arise more frequently in warm climates than in cold ones. They attack persons of both sexes, of all ages, temperaments, and complexions, but the male sex more frequently than the female, and those of a robust and vigorous constitution oftener than those of a weak habit. An idea is entertained by many, that negroes are more predisposed to attacks of tetanus than white people: they certainly are more frequently afflicted with it; but this circumstance does not arise from any constitutional predisposition, but from their being more exposed to punctures and wounds in the feet, by nails, splinters of wood, pieces of broken glass, &c., from going usually barefooted.

Tetanic affections are occasioned either by exposures to cold when under profuse perspiration, sleeping in the open air on damp ground, or by the presence of irritating substances in the stomach and bowels, such as worms; or by some irritation of the nerves, in consequence of local injury by puncture, incision, or laceration. Lacerated wounds of tendinous parts prove in warm climates a never-failing source of these complaints. In cold climates, as well as in warm ones, the locked-jaw, or trismus, frequently arises in consequence of various surgical operations, particularly the amputation of a limb, or of gun-shot wounds. Some cases have been recorded where trismus was supposed to be owing to affections of the mind.

When the disease has arisen in consequence of a puncture, wound, or any other external injury, the symptoms show themselves generally about the eighth day; but when it proceeds from an exposure to cold, they generally make their appearance much sooner.

In some instances tetanus comes on suddenly, and with great violence; but it more usually makes its attack in a gradual man-

ner : in which case a slight stiffness is at first perceived in the back part of the neck, which after a short time becomes considerably increased, and at length renders the motion of the head both difficult and painful.

With the rigidity of the head there is likewise an uneasy sensation at the root of the tongue, together with some difficulty of swallowing ; and great tightness is perceived about the chest, with a pain at the extremity of the sternum shooting into the back. A stiffness also takes place in the jaws, which soon increases to such a height that the teeth become so closely set together as not to admit of the smallest opening. When the tetanic affection is confined to the jaws, the disease is called trismus.

In some cases the spasmodic affection extends no further; in others, the spasms at this stage of the disease, returning with great frequency, become likewise more general, and now affect not only the muscles of the neck and jaws, but likewise those of the whole of the spine, so as to bend the trunk of the body very forcibly backwards, and this is what is named opisthotonos. Where the body is bent forwards, the disease is called emprosthotonos.

During the whole course of the disorder the abdominal muscles are violently affected with spasm, so that the belly is strongly retracted, and feels very hard, most obstinate costiveness prevails, and both the flexor and extensor muscles of the lower extremities are commonly affected at the same time, so as to keep the limbs rigidly extended.

The flexors of the head and trunk become at length so strongly affected as to balance the action of the extensors, and to keep the head and trunk so rigidly extended and straight as to render it incapable of being moved in any direction. The arms which were little affected before, are now likewise rigidly extended ; the tongue also becomes affected with spasm, and being convulsively darted out, is often much injured by the teeth, the jaws at that moment snapping together. It is to this state of the disease that the term of tetanus has been strictly applied.

The spasms which recur at first every ten or fifteen minutes, besides being brought on by slight movements of the body and pressure on the abdomen, are, in the advanced stages, excited by the presentation of any substance, solid or fluid, to the lips, so as at first view nearly to resemble those in a person affected with rabies. Tetanus is seldom attended with either nausea or vomiting, or with any fever, but always with most violent pain.

The disorder continuing to advance, every organ of voluntary motion becomes affected, the eyes are rigid and immoveable in their sockets, the countenance is hideously distorted and expresses great distress, the strength is exhausted, the pulse becomes irregular, and one universal spasm puts a period to a most miserable state of existence.

With regard to the duration of tetanus, when it proves fatal it generally carries off the patient before the tenth day, but some-

times before the fifth; and the younger the subject, the more rapid the disease.

When tetanic affections arise in consequence of a wound, puncture, or laceration, they are almost sure to prove fatal, as I never but once met with a recovery under such circumstances, during a very extensive practice and long residence in the West Indies. The locked-jaw arising in consequence of an amputation, or gunshot wounds, likewise proves usually fatal. When these affections are produced by an exposure to cold, they may in most cases be removed by a timely use of proper remedies, notwithstanding a considerable space will probably elapse before the patient will be able to regain his former strength. Although there is sometimes a great abatement of the spasms in tetanus, still they are apt to return with renovated force.

Dr. Parry* has remarked, that if, in an adult, the pulse by the fourth or fifth day does not reach 100 or 110 beats in a minute, he believes the patient almost always recovers: if, on the other hand, the pulse on the first day is 120 or more in a minute, few instances, he apprehends, will be found in which he will not die. This observation respecting the acceleration of the pulse has not, however, been confirmed by other practitioners.

On dissections of this disease, slight effusions within the cranium have been observed in a few instances; but in by far the greater number nothing particular has been discovered, either in the brain or any other organ. In some instances, however, the blood is not found in coagula, but fluid like molasses, as in animals killed by lightning, appearing to indicate that the whole muscular fibres of the arterial system had partaken of the general spasmodic action.

The bodies of tetanic patients run rapidly into putrefaction after death.

It is stated by Baron Larrey, that in his examination of bodies of persons who have died of tetanus, he found the pharynx and œsophagus much contracted, and their internal membranes red, inflamed, and covered with a viscid reddish mucus. Others have discovered the intestines much inflamed, and in a few instances a yellow waxy fluid of a peculiar offensive smell, covering their internal surface;† but whether the inflammation was primary, or only a consequence of the pressure of the abdominal muscles, which contract so violently in this disease, has not been decided. The inflammation in tetanus is however different from that observed in enteritis: in the latter, the intestines often adhere to one another by layers of coagulable lymph, recently thrown out; flakes of a curdled matter are frequently found, and pus is sometimes formed. In the inflammation attending tetanus there are no adhesions; nor is there any formation of pus.

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* See his Cases of Tetanus and Rabies Contagiosa, p. 18.

† See Medico-Chirurgical Transactions, vol. vii. part ii. p. 459.

The nerves of tetanic patients have been examined after death from the place of injury to their central termination, but no inflammation has been observable in any part of their course: the supposition, therefore, of an inflamed nerve being the cause of tetanus, ought to be rejected.

Although our endeavours may not be crowned with success, where tetanus or trismus arises from a lacerated wound, or puncture in some tendinous part, still we should by no means suffer the patient to remain in so miserable a state of existence without making some efforts to afford even a temporary relief or alleviation of his sufferings.

On being applied to for advice, the practitioner should endeavour in the first place to find out the cause which has given rise to the disease. If supposed to proceed from a wound or puncture, he ought carefully to examine the injured part, and to extract, as quickly as possible, any extraneous body that may have lodged therein, taking care at the same time to dilate or freely lay open the wound.

These steps being taken, it may possibly be attended with some advantage to pour a small quantity of a strong solution of opium into the wound, dressing it afterwards with a little lint dipped in the same, and laying a pledget spread with some digestive ointment over the whole. Every time the dressings are renewed, the wound is again to be wetted with the solution.

The partial division of a nerve being sometimes supposed to occasion tetanic affections, the practitioner ought, when this is suspected to be the case, to make a deep incision into the part which has been injured, so as to divide the tendinous and nervous fibres entirely, after which he should adopt the mode of treatment that has just been recommended.

Penciling the wound freely with lunar caustic, and afterwards covering it with a poultice of bread and milk, with the view to obtain suppuration as soon as possible, is another mode of proceeding which has been pursued in tetanus arising from external injury. Baron Larrey has recommended the application of a hot iron in these cases, promoting suppuration afterwards as speedily as possible by stimulant dressings.*

Dr. Darwin recommends† the wound to be dilated, and then to fill it with lint moistened with spirits of turpentine, which brings on an inflammation in it, and thereby cures or prevents the convulsions.

A case of trismus, which was successfully treated by Dr. Stevenson, of Baltimore, America, in this manner, is recorded in the 3d No. of the New Medical and Physical Journal, p. 220.—S. P., a stout plethoric black woman, aged about thirty-five years, in walking barefoot, chanced to tread upon a piece of glass, which wounded her foot near the first joint of the little toe. It bled copiously,

* See his Military Surgery. † See Zoonomia, vol. iv. page 17.

and no attention was paid to it. It healed, as usual, in a few days after the accident. At the expiration of three weeks she was suddenly seized with a spasm in the muscles of the lower jaw, accompanied with intolerable pain, particularly near the coronoid and condyloid processes. This, in spite of large quantities of opium, increased, and a rigidity of the jaw superseded to such an extent that she could not masticate her food. Two grains of opium were given every two hours without any alleviation of the symptoms. In this dreadful state the Doctor made an incision about half an inch deep, and an inch and a half in length, immediately above the cicatrix, in a transverse direction, and then poured strong spirits of turpentine into the wound. In a few minutes violent pain was created in the part; in half an hour the spasms left the jaw; and in a few hours more the rigidity entirely vanished. The pain in the wound became excessive, and continued so for four or five hours; but the trismus was completely removed, nor did it ever recur. Little or no suppuration ensued, the wound healing by the first intention or adhesive inflammation.

Opium is the medicine which has been employed with the best effect in cases of tetanus; but it should always be given in moderate doses at first, and so be increased gradually. In administering opium in this disease, the attention must, however, be directed to the effect that it produces on the patient, and not to the quantity which is taken, as many cases are on record, where an ounce of it in substance has been given in the course of twenty-four hours, the spasms having been very frequent and violent.

By many it has been supposed that joining it with musk, camphor, and æther, has greatly added to its effect. A combination of these medicines (as in the formulæ below*) had therefore best be used, taking care to increase the quantity of opium in each succeeding dose. The good effects of opium combined with James's powder, as also with ipecacuanha, in some cases of tetanus arising from wounds, are attested by Dr. Latham, in the 4th volume of the Medical Transactions of the London College of Physicians.

Giving the mild alkali internally, and administering opium at the same time in alternate doses, together with the use of a hot bath impregnated with potass and a few ounces of quick-lime, is a mode

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* 1. ℞ Moschi, gr. x.
Spirit. Cinnam. f. ℥ij.
Mistur. Camphoræ, f. ℥j.
Tinct. Opii, ♏ xxvj. M.
ft. Haustus, 3tia vel 4ta hora sumendus.

Vel,

2. ℞ Misturæ Camphoræ, f. ℥vjss.
Spirit. Æther. C. f. ℥ss.
Tinct. Opii, f. ℥ij. M.
ft. Mistura, cujus sit dosis cochlearia duo magna tertiis horis.

* 1. Take Musk, ten grains.
Spirit of Cinnamon, two drachms.
Camphor Mixture, one ounce.
Tincture of Opium, forty drops.
Mix them for a draught, to be taken every third or fourth hour.

Or,

2. Take Camphor Mixture, six ounces and a half.
Compound Spirit of Æther, half an ounce.
Tincture of Opium, two drachms.
Of this mixture, the dose may be two tablespoonsful every three hours.

of treatment much recommended by Dr. Stutz, of Suabia, in tetanus and trismus traumaticus.*

An alternate internal use of opium and subcarbonate of potass is said to have been employed in the hospitals of Germany among the wounded soldiers in the late war with a most happy effect. The remedy is, therefore, worthy of our attention in tetanic affections.

In those cases where the jaws are so firmly locked together as to prevent a spoon from being introduced between them, and where the teeth are quite perfect in front, it will be necessary to extract some of them, for the purpose of giving the patient his medicines and food. When he loses the power of deglutition, opium is then to be administered in clysters.

Besides giving opium internally, it may likewise be employed externally, by rubbing the parts frequently which are most affected by spasm with equal parts of the linimentum saponis and tinctura opii, or with the ointments prescribed below.†

This mode of introducing opium into the system will more particularly be necessary where the patient loses the power of swallowing; and by being applied to the parts immediately affected, promises fair for affording essential relief.

Dr. Mosely asserts,‡ that opiates applied externally are not of the smallest utility either in the prevention or cure of tetanus. In this I must beg leave to differ from him, as, during my practice in the West Indies, I met with many instances where the most evident advantages were derived by using it in this way.

To procure a relaxation of the spasms, it has been customary to make use of a warm bath in conjunction with anodyne frictions, and occasionally a clyster of tobacco‖ has been administered about twice a day with success; but in all the instances of a recovery from tetanus which have taken place under my care, the cold bath was substituted instead of the warm. These, however, were cases (one excepted) which arose from exposures to cold. The plan generally pursued was, to throw a large pailful of cold water every two hours on the patient, after which he was wiped dry, and again put into bed; an opiate draught, similar to what has been advised, was then given to him, and the parts most affected were well rubbed

* See Medical and Physical Journal, vol. iii. p. 572, and vol. v. p. 472.
‡ See his Treatise on Tropical Diseases, p. 494.
‖ See the Edinburgh Med. and Surgical Journal, No. 42, p. 198.

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† 3. ℞ Opii Pulv. Subtilis, ℥j.
Camphoræ, gr. xv.
Adipis Præparat. ℥ss. M.
ft. Unguentum.
Vel,
4. ℞ Adipis Præparat. ℥j.
Olei Succin. f. ℥ss.
Opii Pulverisat. ℥ij. M.

† 3. Take Opium, reduced to a powder, one drachm.
Camphor, fifteen grains.
Prepared Lard, half an ounce.
Mix them as an ointment.
Or,
4. Take Prepared Lard, one ounce.
Oil of Amber, half an ounce.
Opium, pulverized, two drachms.
Mix them.

with a strong anodyne liniment. When he was so far recovered as to be able to swallow with facility, the cinchona bark was also given to him with a very free allowance of wine; which course was pursued for a considerable time after the spasmodic affection had ceased.

In traumatic tetanus, a warm bath seems entitled to a decided preference over a cold one. Bathing in water heated to a temperature of from 87 to 97 degrees, Dr. Currie says, allays the violent action of the heart and arteries, and soothes the system of sensation: it reduces the pulse in frequency, moderates and equalizes vascular action, relaxes the muscular fibres, removes rigidity, and disembarrasses the organs of respiration. Recognising such virtues in water raised to the warm temperature, we may estimate its application in the form of a bath, as at least a soothing remedy for the sufferings which a genuine paroxysm of tetanus never fails to inflict.

It has been recommended by some physicians to endeavour to excite a salivation by using mercury both internally and externally; but, I must say, I never found it answer. My trials of it were, however, few; for having experienced the method which I have recommended to be so very successful, in almost every instance where the disease arose from an exposure to cold, I should not have thought myself justified in losing time by using any remedy which was attended with uncertainty.

Where mercury is employed in the cure of tetanus with the view of exciting a salivation, the patient should be put now and then into a warm bath; and that he may have every chance of recovering, I would recommend a joint use of opium at the same time.

In the Transactions of the College of Physicians of Philadelphia, vol. i. part. i., is inserted a case of tetanus, from the extraction of two teeth, which was successfully treated by Dr. Rush, by a use of mercury and wine; and others are elsewhere recorded on indisputable authorities.

In the New-York Medical Repository for 1799, is mentioned another case of tetanus arising from the puncture of a pin in the wrist, which was successfully treated by Dr. Hosack with wine (Madeira) *alone;* the woman having taken three gallons in a few days, in doses of a wine-glassful (containing about two ounces) every hour. It seems necessary to observe, however, that in this case the wound was freely pencilled with lunar caustic, after which it was covered with an emollient poultice.

In those affections where inflammation of the system might be of service, Dr. Darwin thinks wine might be preferable to opium. He mentions, that he has observed a mixture of rectified spirit and warm water, given alternately with the doses of opium, has soonest and most certainly produced that degree of intoxication which was necessary to relieve the patient in the epilepsia dolorifica.*

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* See Zoonomia, vol. ii. p. 431.

In some cases of tetanus arising from wounds in the limbs, it probably would be the best practice to amputate as soon as the symptoms appear. This plan is strongly recommended by Baron Larrey, who acted as surgeon-in-chief to the French army in Egypt and Syria;* for he found that it succeeded in some instances when assisted by the warm bath, aperients, venesection, opium, camphor, and other remedies. Even where the case terminated fatally, he found that the operation relieved the symptoms very considerably; but he nevertheless does not justify any surgeon in resorting to amputation as a general means of terminating the distresses which tetanic patients are doomed to endure.

When tetanus has proceeded from an exposure to cold, it is apt to be attended with some slight inflammatory symptoms; to remove which, bleeding is sometimes had recourse to, but it usually proves injurious instead of beneficial.

As costiveness is a constant attendant on tetanus, it should be obviated by the frequent exhibition of some active aperient† while the power of swallowing remains; and after it has ceased, by the regular exhibition of clysters. Oil of turpentine may be employed as an evacuant, either by the mouth, or in the form of a clyster. If in the first way, make trial of half an ounce every two hours in a little gruel, if the patient be able to swallow; but if not, administer one ounce in an enema twice a day, along with the other remedies necessary to be employed. Of the utility of purgatives in cases of tetanus, whether idiopathic or occurring after wounds, there can be no doubt, and their efficacy is strongly enforced by Dr. Hamilton.‡ The torpor of the intestines which precedes and accompanies this disease, is highly deserving of attention. In many instances the evacuations have not the appearance of fæces, but are nevertheless of a highly offensive nature.

Among the remedies for tetanus, it may be proper to mention the oleum petrolei, or Barbadoes tar, which, by being taken internally, has been said in some instances to have effected a cure.

Electricity is reported to have lately been employed in some cases of the locked-jaw with a happy effect. The remedy seems therefore deserving of further trials.

Throughout the whole course of all tetanic affections, the patient's strength is to be supported by wine, mixed with such things as he can easily swallow; and where this power ceases, nutritive clysters must be substituted.

* See Relation Historique et Chirurgicale de l'Expédition de l'Armée d'Orient en Egypte et en Syrie, par D. J. Larrey.

‡ See his Treatise on Purgatives.

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† 5. ℞ Infus. Sennæ Comp. f. ℥jss.
Sodæ Sulph. f. ℥ss.
Tinct. Jalapæ, f. ℥ij.
Syrup. Rhamni, f. ℥j. M.
ft. Haustus.

† 5. Take Compound Infusion of Senna, one ounce and a half.
Sulphate of Soda, half an ounce.
Tincture of Jalap, two drachms.
Syrup of Buckthorn, 1 drachm.
Mix them for a draught.

The trismus nascentium is a species of tetanus; but this is inserted among the diseases peculiar to infants.

Dr. James Clark, in his Treatise on West-India Diseases, informs us, that, being unable to cure the symptomatic tetanus, he endeavoured to prevent it; and for this purpose, after wounds and punctures, he gave two or three grains of calomel twice a day till a gentle salivation came on, and he pursued the same plan after operations. Out of fifteen patients, after amputation, that were treated in this way, only one died, and he was in so irritable a state before, that bad consequences were dreaded. In those who had been wounded or punctured, the success was greater; two only having been lost out of a great number since this mode of practice was begun.

To prevent tetanic affections from arising after wounds and chirurgical operations, I understand it is almost an universal practice on board of ships of war to mix tincture of opium with the dressings, and that since this practice has been adopted these complaints seldom occur. As a prophylactic, I should be much inclined to adopt this mode of treatment in preference to that proposed by Dr. Clark.

SINGULTUS, OR HICCUP.

Hiccups are a spasmodic affection of the stomach and diaphragm, arising from some peculiar irritation. They are in general symptomatic, but in some instances they appear as a primary disease.

When they are idiopathic, they usually arise from an error in diet or from an acidity in the stomach. When symptomatic, they either come on towards the termination of some acute disease, attend on injuries done to the stomach and other viscera, or prevail as an affection attendant on hysteria.

Hiccups prevailing as a primary affection, are never attended with danger, and are in general easily removed; but when they arise in any acute disorder, or after a mortification has taken place, they may always be looked upon as the forerunners of death.

The appearances on dissection will depend entirely on the disease of which they have appeared as a symptom.

A common hiccup is often removed by taking a few small draughts of cold water, in quick succession, or by a sudden excitement of some degree of fear or surprise. When these simple means do not answer, recourse must be had to antispasmodics, the most useful of which for this disease seem to be æther, musk, and opium. These may either be combined together, or be given separately.

In the accidental hiccup of youth or of very old people, a pretty certain remedy is a small quantity of any powerful acid, such as a tea-spoonful of vinegar or lemon-juice, or a little peppermint-water acidulated with a few drops of sulphuric acid.

Where hiccups prove violent as well as obstinate, the application of a large plaster of Venice treacle to the patient's stomach sometimes affords relief; but should it fail, a blister may then be substituted.

Hiccups sometimes proceed from an acidity in the stomach, and hence it is that infants are very apt to be affected with them. When they arise from this cause, a little prepared chalk or magnesia joined with some carminative, such as the oleum anisi, will be the most proper medicine.

When hiccups arise at the close of any acute or malignant disease, or in consequence of a mortification, no advantages can be obtained from medicine, or any other means whatever.

PERTUSSIS, OR WHOOPING COUGH.

PERTUSSIS is a convulsive cough, interrupted by a full and sonorous inspiration, and returning in fits that are usually terminated by a vomiting or expectoration. In its first stage, it may be considered as a febrile disease.

Children are most commonly the subjects of pertussis, and it seems to depend on a specific contagion, which affects them in general but once in their life. I have said in general, because instances have occurred where the same person has been attacked with it a second time, although an idea contrary to this is entertained by the generality of practitioners. The disease being produced, the fits of coughing are often repeated without any evident cause; but in many cases the contagion may be considered as only giving the predisposition, and the frequency of the fits may depend upon various exciting causes, such as violent exercise, a full meal, the having taken food of difficult digestion, and irritations of the lungs by dust, smoke, or disagreeable odours. Emotions of the mind may likewise prove an exciting cause.

Pertussis often prevails epidemically, but does not, in this respect, appear to be influenced by any particular season of the year. It has however been observed to be much milder in warm climates than in cold ones; and it would seem, in conformity to this law, that the disease is found to be more severe in this country during autumn and winter, than during spring and summer. It arises generally from contagion, it is true; still it must be allowed that there is a principle independent of contagion capable of producing the complaint, and that this principle undoubtedly exists in the atmosphere, which it pervades to a certain extent; but what it is, and how formed, remains a curious subject for physical research.

The proximate or immediate cause of pertussis seems to be a viscid matter or phlegm lodged upon the bronchiæ, trachea, and fauces, which sticks so close as to be expectorated with the greatest difficulty. Some have supposed it to be a morbid irrita-

bility of the stomach, with increased action of its muscous glands; but the affection of the stomach which takes place in the disease, is clearly only of a secondary nature, so that this opinion must be erroneous.

The whooping cough usually comes on with an oppression of breathing, some degree of thirst, a quick pulse, and other slight febrile symptoms, which are succeeded by a hoarseness, cough, and difficulty of expectoration. These symptoms continue perhaps for a fortnight or more, at the end of which time the disease puts on its peculiar and characteristic form, and is now evident, as the cough becomes convulsive, and is attended with a peculiar sound, which has been named a whoop.

When the sonorous inspiration has taken place, the coughing is again renewed, and continues in the same manner as before, till either a quantity of mucus is thrown up from the lungs, or the contents of the stomach are evacuated by vomiting. The fit is then terminated, and the patient remains free from any other for some time, and shortly afterwards returns to the amusements he was employed in before the accession of the fit, expresses a desire for food, and when it is given to him, takes it greedily. In those cases, however, where the attack has been severe, he often seems much fatigued, makes quick inspirations, and is rather faint.

On the first coming on of the disease there is little or no expectoration, or, if any, it consists only of thin mucus; and as long as this is the case, the fits of coughing are frequent and of considerable duration; but on the expectoration becoming free and copious, the fits of coughing are less frequent, as well as of shorter continuance.

By the violence of coughing, the free transmission of blood through the lungs is somewhat interrupted, as likewise the free return of the blood from the head, which produces that turgescence and suffusion of the face which commonly attend the attack; and in some instances brings on a hæmorrhage either from the nose or ears.

The disease having arrived at its height, usually continues for some weeks longer, and at length goes off gradually. In some cases it is however protracted for several months.

Although the whooping cough often proves tedious, and is liable to return with violence on any fresh exposure to cold, when not entirely removed, it nevertheless is seldom fatal, except to very young children, who are always likely to suffer more from it than those of a more advanced age. The danger seems indeed always to be in proportion to the youth of the person, and the degree of fever and difficulty of breathing which accompany the disease, as likewise the state of debility which prevails.

It has been known in some instances to terminate in apoplexy and suffocation. In some it lays the foundation for asthma and phthisis pulmonalis. If the fits are put an end to by vomiting, it may be regarded as a favourable symptom, as may likewise the

taking place of a moderate and free expectoration, or the ensuing of a slight hæmorrhage from the nose or ears.

Dissections of those who die of the whooping cough usually show the consequences of the organs of respiration having been affected, and particularly those parts which are the seat of catarrh; hence the mucous membranes of the trachea and bronchiæ are commonly found in a morbid state. In many instances the lungs have exhibited highly morbid appearances, the trachea and its ramifications bearing vestiges of recent inflammation, and the aircells and the bronchiæ, near to their bifurcation, filled with a whitish purulent-looking mucus. Serous accumulation in the pericardium is also frequently met with. In some instances the lungs have been found adhering to the pleura. When the disease has been long protracted, or has degenerated into pulmonary consumption, asthma, or visceral obstructions, the glands of the mesentery are found in a hard and enlarged state.

In the treatment of pertussis, we are, in its first or early stage, to moderate its violence, and palliate the urgent symptoms; and at an advanced period, to arrest its progress, and put a stop to it by suitable remedies, sooner, perhaps, than it would spontaneously have ceased.

In all severe cases of pertussis, where the cough is accompanied with a difficulty of breathing, or full pulse, much heat, and other febrile symptoms, early venesection ought never to be neglected,* particularly in children of a full plethoric habit. As soon as the cough becomes severe, we should draw off blood liberally at one time, which will often enable us to prevent mischief, and render the disease mild in its progress; but upon the accession of febrile paroxysms and a hurried respiration, which indicate a considerable degree of inflammation in the mucous membrane, or where the inflammation has extended to the substance of the lungs, and thus produced, in combination with those of the whooping cough, symptoms of pneumonia, this remedy becomes indispensable to the safety of the patient. Under these circumstances we must not be satisfied with a single bleeding; it should be repeated in sufficient quantities until the symptoms are under control, or we are convinced that amendment is beyond its power. The failure of venesection in pertussis may very often be attributed to its being resorted to at too late a period, or its being too sparingly used.

In milder attacks of the disease, where the cough and difficulty of breathing are more moderate, but still severe enough to occasion a determination to the head, it may be advisable to take away some blood by applying a sufficient number of leeches to the chest, instead of resorting to venesection; and if the dyspnœa and determination of blood to the head are not lessened in due time, the application should be repeated. Indeed, in such cases,

* See Dr. Watt's Work on Pertussis.

epistaxis sometimes arises naturally, and never fails to afford the child considerable relief. In common cases of pertussis, unattended by febrile paroxysms or dyspnœa, bleeding of any kind will be unnecessary.

Where there is much difficulty of breathing, the application of a blister to the chest will be highly proper at the commencement of the disease.

Some practitioners have recommended the lower region of the stomach to be rubbed very frequently with a stimulating embrocation,* covering the part afterwards with flannel. Inhaling the steam of warm water with an addition of vinegar or æther twice or thrice a day, may be of service.

The body being usually very costive, it will be necessary to have recourse to gentle laxatives, such as an infusion of senna with manna, &c., to remove it. In many instances an attention to diet may probably be sufficient to answer the purpose of removing or preventing this symptom; and therefore stewed prunes, roasted apples, &c., may be given, which things children take very readily.

Emetics administered frequently, have been found the most useful of all remedies in whooping cough, for which reason they ought never to be neglected; and as children may easily be deceived by what has no appearance of medicine, a solution of tartarized antimony † seems the most proper for the occasion. The best way, however, will be to give about a table-spoonful every fifteen minutes or so, until it takes effect, as dangerous consequences might ensue from the medicine happening to operate harshly, and producing much vomiting, which in some cases a very small quantity of it is apt to do. Where the patient is grown up to an adult state, an emetic of the wine of antimony or ipecacuanha, or of oxymel of squills, may be substituted.

A medicine composed of opium, ipecacuanha, and the carbonate of soda, is recommended by Dr. Pearson‡ to be given in pertussis, after the accumulated phlegm has been brought away by an antimonial emetic. He advises it in the following proportions to a child between one and two years, viz. one drop of the tincture of opium, five drops of ipecacuanha wine, and two grains of the carbonate of soda, which may be made up into a small draught with syrup and water, and be repeated every fourth hour for several

‡ See Medico-Chirurgical Transactions, art. 3.

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* 1. ℞ Antimon. Tartarizat. ℈j.
Aq. Puræ, f. ℥ij.
Tinct. Cantharid. f. ℥ss. M.
ft. Embrocatio.

† 2. ℞ Antimon. Tartarizat. gr. iij.
Aq. Puræ, f. ℥vj.
Syr. Simpl. f. ℥ij. M.
ft. Solutio.

* 1. Take Tartarized Antimony, one scruple.
Pure Water, two ounces.
Tincture of Spanish Fly, half an ounce.
Mix them for an Embrocation.

† 2. Take Tartarized Antimony, three grains.
Pure Water, six ounces.
Common Syrup, two drachms.
Mix them.

days; taking care to remove costiveness, whenever it occurs, by submuriate of mercury and rhubarb. Dr. Pearson is of opinion, that without the soda the preparations of ipecacuanha and opium would not be equally efficacious, and was led to employ it by the sour smell of the slimy fluid brought up by vomiting; but he suspects that it has an influence beyond that of correcting acidity.

Bathing the feet frequently in warm water has been supposed to afford relief in many cases. A tepid bath is sometimes serviceable.

The acetate of lead has been lately recommended in the whooping cough, and is said to relieve the symptoms of the disease very speedily, without producing any bad effects on the stomach and bowels. It may be given as in the formula inserted below.*

Exciting a slight degree of strangury has been attended with a good effect in some instances of pertussis. A combination of tinctura cantharidis, and tinctura camphoræ composita,† may be used for this purpose; giving it in doses of about fifteen drops, repeated every three or four hours, until some slight effect of this nature is produced, when the dose may either be lessened, or be given at longer intervals. Its efficacy most likely is owing to the counter-irritation which it excites.

For obviating the fatal tendency of the disease, and putting it into a safe train, the remedies which have been advised are evidently the most proper; but in its second stage, where it may be considered as continuing from the power of habit alone, all danger and violence being over, we must alter the plan of treatment, and have recourse to antispasmodics and tonics.

Of the first class, musk, castor, assafœtida, oleum succini, camphor, and opium, have principally been used; but their effects seem rather doubtful; and as they are all nauseous medicines, particularly the first three, it may not be easy to persuade children to take them.

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* 3. ℞ Plumbi Acetatis, gr. ij —v.
Aq. Rosæ, f. ℥ij.
Syrup. Violæ, f. ℥ij. M.
ft. Mistura.
Capiat cochl. parvulum 4ta vel 5ta quaque hora.

† 4. ℞ Tinct. Camphoræ Compos. f. ℥j.
—— Cantharidis, f. ℥ij M.

Vel,

5. ℞ Decoct. Cinchon. f. ℥iijss.
Tinct. Cantharidis, ℥ xxvj.
——Camphor. Compos. f. ℥ss. M.
Capiat cochleare medium quartis horis.

* 3. Take Acetate of Lead, two to five grains.
Rose Water, two ounces.
Syrup of Violets, two drachms.
Of this mixture a tea-spoonful may be taken every fourth or fifth hour.

† 4. Take Compound Tincture of Camphor, one ounce.
Tincture of Spanish Fly, two drachms.

Or,

5. Take Decoction of Peruvian Bark, three ounces and a half.
Tincture of Spanish Fly, forty drops.
Compound Tincture of Camphor, half an ounce.
Of this mixture let a dessert-spoonful be taken every four hours.

The uncertainty of the dose of opium, as well as the inconvenient effects produced by it on children, operate somewhat against the internal use of this drug, but its external use promises much benefit. In order to disguise tincture of opium, a few drops of æther may be added, and in this way it may be employed as an embrocation twice or thrice a day over the chest and stomach.

Artificial musk is a medicine which is reported to have been given in the whooping cough with the most decided advantage, even when other remedies have failed. A small quantity may be dissolved in a little rectified spirit, and about three or four drops be given twice a day, gradually increasing the dose to six, thrice in the twenty-four hours.

Hemlock has been administered in this disease as a narcotic, and frequently with success. In a few cases where I made trial of it, some advantage seemed to be obtained from its use; but as I gave it combined with other remedies as below,* probably it was not entitled to the whole merit.

The tincture of digitalis is another medicine which has of late been recommended in the whooping cough. I have prescribed it in a few cases with seeming advantage. Combining it with opium might perhaps increase its efficacy. Hyoscyamus has likewise been proposed as a remedy in pertussis. It may be given combined with the antimonial solution,† regulating the dose by the age of the child. We may begin with four or five drops, repeated four times a day, gradually increasing the quantity till a slight degree of nausea takes place.

Belladonna has been much employed on the Continent by Hufeland, and others, in pertussis, and is said by them to have produced most excellent effects, by greatly diminishing the force, violence, frequency, and duration of the accessions of this distressing cough, and by entirely removing the disease in a very short space of time. The dose is a quarter of a grain of the powdered root, with a few grains of sugar, morning and night, to children under one year; to

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* 6. ℞ Extract. Conii, gr. j.—ij.
Decoct. Cort. Cinchon. f. ℥j.
Tinct. Opii, ♏ iij. M.
Fiat haustus, ter in die sumendus.

Vel,

7. ℞ Extract. Cinchon. gr. xxxvi.
——— Conii, gr. xij.
Syrup. q. s. M.
ft. Massa, in pilulas xij. distribuenda, quarum unam capiat bis terve in die.

† 8. ℞ Vini Antimon. Tartarizat. f. ℥i.
Extract. Hyoscyami, ℈ij. Solve.

* 6. Take Extract of Hemlock, one or two grains.
Decoction of Peruvian Bark, one ounce.
Tincture of Opium, five drops.
Mix them, to be taken as a draught three times a day.

Or,

7. Take Extract of Bark, thirty-six grains.
———Hemlock, twelve grains.
Syrup, a sufficiency to form the mass, which is to be divided into twelve pills, whereof one is to be taken twice or thrice a day.

† 8. Take Wine of Tartarized Antimony, one ounce.
Extract of Henbane, two scruples.
Dissolve the latter in the former.

those from two to three years of age, half a grain twice in the twenty-four hours; and to those from four to six years of age, a grain and a half in the same time. The dose may be enlarged every two or three days until the increase equals half of the first dose.

The hydro-cyanic (prussic) acid has been used with great success in the whooping cough, as well as in other spasmodic dry coughs; (for the mode of administering it, see Phthisis;) but the dose for children ought never to exceed from four to six drops in the twenty-four hours, and should be given in divided doses of one drop in each.

To take off the irritation from the mucous membrane, which is the principal seat of the disease, as well as to strengthen the general habit, it will be advisable to employ the bark of cinchona. It may be given joined with the other remedies; but as it is often impossible to persuade children to take it in substance, we must be content with substituting a decoction or strong infusion of it. Other tonics, such as the various preparations of steel, zinc, &c. may likewise be administered.

Arsenic has lately been recommended in pertussis by Mr. Simmons, of Manchester;* and he asserts that it is attended with the most salutary effects, moderating the symptoms in a few days, and generally making a complete cure in the space of a fortnight. It has been given to children of a year old with safety, in the doses recommended by the late Dr. Fowler, of Stafford, (see Intermittents,) whose solution was used. It appears, however, that Mr. Simmons employed venesection and emetics occasionally; and he recommends, after the solution has been omitted for a week, to repeat it, in order to guard against a relapse.

A frequent change of air, having always been found very serviceable in this disease, ought therefore to be advised. A flannel waistcoat should be worn by the patient, as no doubt it promotes absorption, and prevents the vicissitudes of the climate taking that effect on the skin which we know it does, acting thereby as an exciting cause of coughing.

Young children should lie with their heads and shoulders raised, and should be cautiously watched, that when the cough occurs they may be held up, so as to stand upon their feet, bending a little forward to guard against suffocation. Their diet should be light, and of easy digestion, and mucilaginous diluents should be taken freely.

PYROSIS, OR WATER-BRASH.

A DISCHARGE of a thin, watery, or glairy fluid from the stomach, with eructations, and likewise a sense of burning heat in the epigastric region, are the chief characteristics of this disease.

* See Annals of Medicine for 1797.

It principally attacks those of a middle age, and more frequently affects females than males, particularly the unmarried. Those who are afflicted with fluor albus have been found to be much predisposed to it.

Being a disease not much known, and occurring but seldom, its causes have not been properly ascertained, but a low diet has been ascribed as being apt to give rise to it. The application of cold to the lower extremities, and distressing emotions of the mind, are likewise enumerated among its occasional causes.

The fits of pyrosis usually come on in the morning and forenoon, when the stomach is empty; and the first symptom which the patient perceives is a pain at the pit of the stomach, with a sense of constriction, as if it was drawn towards the back, and this is usually much increased by an erect posture. The pain, after proving severe, and continuing for some time, is followed by eructations and the discharge of a considerable quantity of a thin watery fluid, sometimes of an acid taste, but often quite insipid. In some instances however, it is very ropy, and of an appearance somewhat similar to the white of an egg, as happened in a case which some time ago came under my observation.

On a frequent repetition of the eructations and discharge, the fit at length goes off.

This disease rarely proves fatal, but is often tedious and troublesome to remove, being apt to recur occasionally a long time after it has once taken place.

For its cure no certain method has yet been proposed; but its fits are relieved by antispasmodics, such as æther, musk, castor, ammonia, oleum cajeputæ, opium, and the chewing or smoking of tobacco. In the intervals the cinchona, with the acidum sulphuricum dilutum, chalybeates, and other tonics, will be advisable. To carry off the offending fluid or mucus, I am of opinion that we may employ mild purgatives* about twice a week with advantage. As adjuvants will be occasionally serviceable, magnesia and alkalies (especially ammonia) will correct acidity, and relieve the heartburn and other dyspeptic symptoms.

In pyrosis, as well as in gastrodynia and other like affections of the stomach, the oxyd of bismuth has been found to afford much relief, interposing now and then gentle aperients. It appears to be a remedy recommended on the ground of safety as well as utility. An adult may take five grains of it with about a scruple of gum tragacanth three times a day.

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* 1. ℞ Hydrargyri Submur. gr. ij.
Pulv. Antimon. gr. j.
Extract. Colocynth. gr. x.
Syrup. Rhamni, q. s. M.
Fiant pilulæ iij. pro dos.

* 1. Take Submuriate of Mercury, two grains.
Antimonial Powder, one grain.
Extract of Colocynth, ten grains.
Syrup of Buckthorn, a sufficiency to form the mass, which is to be made into three pills, and taken at once.

A case of pyrosis, accompanied by gastrodynia of a year's standing, is recorded in Dr. Bardsley's Medical Reports, which was effectually removed by the oxyd of bismuth in a very short time. The complaint had been so constant and severe as to prevent the patient from following his occupation as a weaver. The pain was fixed and dull, and the quantity of acid discharged from the stomach, in a watery form, was abundant. After clearing the stomach with an active emetic, the bowels were emptied by castor oil, and the patient then entered upon the bismuth. He took twenty grains of a powder consisting of one part of the oxyd and five of gum tragacanth thrice a day for the space of a week, and then increased the dose gradually to forty grains. A short time effected the removal of the pyrosis. The bismuth was then discontinued, and the cinchona with sulphuric acid substituted, which soon completed the cure. It appears likewise that some other cases of pyrosis, accompanied with spasmodic pains, were treated with uniform success. An obstinate case of the disease, accompanied by gastrodynia, lately came under my care, and was perfectly cured by the oxyd of bismuth in conjunction with stomachic bitters.

Linnæus, by whom pyrosis seems first to have been noticed, recommends a use of the nux vomica: the dose is from ten grains to a scruple three times a day.

The case to which I have alluded in the preceding page, and in which there was a discharge of a ropy fluid, was at first treated with antispasmodics; but these being attended with no good effect, the physician who was called in advised the use of the sulphate of zinc combined with opium and the extract of cinchona bark, which seemed at first to be wonderfully efficacious; but the disease shortly afterwards returned, and the patient having lost confidence in the remedy, it was discontinued.

ANGINA PECTORIS.

An acute constrictory pain at the lower end of the sternum, inclining rather on the left side, and extending up into the left arm, accompanied with great anxiety, violent palpitations at the heart, laborious breathing, and a sense of suffocation, are the characteristic symptoms of this disease.

Angina pectoris appears in general to be connected with a full habit, and an accumulation of fat about the heart and in the cellular membrane. It has appeared in some instances to have a connexion with suppressed discharges. Mental emotion seems to be a powerful predisposing cause of the disease.

It is found to attack men much more frequently than women, particularly those who have short necks, who are inclinable to corpulency, and who at the same time lead an inactive or sedentary life. In most instances the attacks are sudden, and occur in those who have previously enjoyed good health. In a few cases spasms

of the stomach, indigestion, and pains in the limbs, are not unusual, which are for the most part removed, or greatly diminished in violence, on the appearance of the disease. Although angina pectoris is sometimes met with in persons under the age of twenty, still it more frequently occurs in those who are between forty and fifty.

In slight cases, and in the first stage of the disorder, the fit comes on by going up hill, up stairs, or by walking at a quick pace, after a hearty meal; but as the disease advances, or becomes more violent, the paroxysms are apt to be excited by certain passions of the mind, by repletion of the stomach, by walking, by riding on horseback, or in a carriage, or by sneezing, coughing, speaking, or straining at stool. In some cases they attack the patient from two to four in the morning, or while sitting or standing, without any previous exertion or obvious cause. On a sudden he is seized with an acute pain in the breast, or rather at the extremity of the sternum, inclining to the left side, and extending up into the arm as far as the insertion of the deltoid muscle, accompanied by a sense of suffocation, great anxiety, and an idea that its continuance or increase would certainly be fatal. The paroxysm seems to consist very much in an impediment or suspension of the vital action of the heart.

In the first stage of the disease the uneasy sensation at the end of the sternum, with the other unpleasant symptoms which seemed to threaten a total suspension of life by a perseverance in exertion, usually go off upon the person's standing still, or turning from the wind; but in a more advanced stage they do not so readily recede: the paroxysms make their attack in the night, they are much more violent, and in a few cases have continued for several days. During the fit the pulse sinks in a greater degree, and becomes irregular, but in some instances it is not much disturbed; the face and extremities are pale, and bathed in a cold sweat, and for awhile the patient is perhaps deprived of the powers of sense and voluntary motion. Sometimes the stomach is morbidly affected, becomes unusually irritable, and rejects whatever is swallowed. The disease having recurred more or less frequently during the space of some years, a violent attack at last puts a sudden period to his existence. He dies after having suffered all the agonies of dissolution; for this is a complaint in which, during the fit, there are the most overwhelming sensations and apprehensions of instant death.

Angina pectoris had passed unnoticed among practitioners, until Dr. Heberden published a description of it many years ago in the Transactions of the College of Physicians of London; since which many gentlemen of eminence in their profession have attempted to investigate its nature, and have obliged us with their observations, particularly Drs. Percival, Fothergill, Wall, and Black.* By

* See his Chirurgical and Pathological Reports.

many of them it has been judged spasmodic. The late Dr. Parry, who has published* his sentiments on it, was of opinion, however, that it is in reality a case of fainting or syncope, which Dr. Cullen defines "motus cordis imminutus, vel aliquamdiu quiescens," and as differing from the common syncope only in being preceded by an unusual degree of anxiety or pain in the region of the heart, and in being readily excited, during a state of apparent health, by any general exertion of the muscles, more especially that of walking. The supposed cause of angina pectoris (for which he has thought proper to substitute the name of syncope anginosa) is referred by him to a diseased state (generally ossification) of the coronary arteries of the heart.

The rigidity of the coronary arteries thus induced may act, he thinks, proportionably to the extent of the ossification, as a mechanical impediment to the free motion of the heart; and though a quantity of blood may circulate through these arteries sufficient to nourish the heart, as appears in some instances, from the size and firmness of that organ, yet there may probably be less than what is requisite for ready and vigorous action. Hence, though a heart so diseased may be fit for the purposes of common circulation during a state of bodily and mental tranquillity, and of health otherwise good; yet when any unusual exertion is required, its powers may fail under the new and extraordinary demand. In conformity with this notion, Dr. Parry endeavours to show that the chief symptoms of the disease are the effect of blood retarded and accumulated in the cavities of the heart and neighbouring large vessels; and that the causes exciting the paroxysms are those which produce this accumulation; either by mechanical pressure, or by stimulating in an excessive degree the circulating system; in consequence of which the heart, weakened by the mal-organization, readily sinks into a state of quiescence, while the blood continues to advance in the veins. After this quiescence has continued for a certain period, the heart may recover its irritability, so as again to carry on the circulation, in a more or less perfect degree, from the operation of the unusual stimuli; or death may at length ensue, from a remediless degree of inirritability in the heart. Such is Dr. Parry's theory.

In my opinion, the primary or original cause of angina pectoris in most cases is either ossification of the coronaries, or some organic lesion (usually of an osseous nature) existing at the origin of the circulation. In some instances an ossification, more or less complete, of the cartilages of the ribs, also accompanies this malady.

The disease in question has been considered by some German writers, as also by Dr. Darwin, as a species of asthma; by the latter it has been named asthma dolorificum. Dr. Hosack, Professor of the Theory and Practice of Physic and Clinical Medicine in the Uni-

* See his Treatise on Angina Pectoris.

versity of New York, is of opinion that the disease proceeds from plethora of the blood-vessels, more especially from a disproportionate accumulation in the heart and large vessels.* The vast accumulations of fat, the effusion of water in the thorax, the distended state of the vessels, and even the bony deposits occasionally met with in the valves and vessels of the heart, he is induced to consider as the effects of such plethora.

We should always look on angina pectoris as attended with a considerable degree of danger at an advanced period of life, and where the paroxysms are frequent or violent; and it usually happens that the person is carried off suddenly. When it really depends upon an ossification of the coronary arteries, or any organic lesion existing at the origin of the circulation, it is evident that we can never expect to effect a cure. In young persons, and when the disease is gradual in its progress, or depends on mechanical pressure, as from obesity, or effused fluid in the pericardium, a slight hope of recovery may be entertained.

In some instances, on inspecting the body after death, the cellular membrane has been found loaded with fat; in the bags of the pleura, and that of the pericardium, a considerable quantity of water has been lodged; and in others the heart itself has been discovered covered with fat, large, flabby, and soft. On the internal surface of the aorta, near its origin, osseous scales have been perceived, and in many instances the coronary arteries are ossified nearly throughout their whole extent. Various small ossifications in different parts of the heart and great vessels, have been a frequent occurrence in dissections relating to this disorder. There are four cases recorded in the seventh volume of the Medico-Chirurgical Transactions, in every one of which there was an ossification more or less complete of the cartilages of the ribs,† which circumstance is curious, and would almost indicate the existence of an ossific diathesis, showing its influence beyond the limits of the arterial system.

During the paroxysms of angina pectoris the patient is to be laid in a somewhat recumbent posture, and if there be a great degree of oppression and constriction about the chest, we are, even although the pulse be faltering and weak, to draw off a few ounces of blood; for in some cases we find that the heart is prevented from beginning to act again by the blood with which it is overloaded. Under this situation, by opening the jugular vein, and gently pressing on the chest, we are to endeavour to expel a portion of the blood from the right side of the heart, and for the same reason that the lancet is sometimes used in suspended animation. Our decided object should be to allow the heart slowly to recover its lost energy.

Every circumstance in the pathology of angina pectoris evinces

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* See American Med. and Phil. Register, vol. ii. p. 366.

† See also Dr. Black's Clinical and Pathological Reports.

that the paroxysm is brought on rather by an accumulation of blood about the heart than by any unusual weakness of the organ at the moment; and therefore venesection appears to be the first remedy that should be tried, and this may be followed up by exciting gentle vomiting, which we know powerfully diffuses the blood from the centre to the surface of the body.

It has been observed by Dr. Parry, and justly, that the extreme weakness of the pulse and coldness of the skin do not contra-indicate bleeding. He is of opinion, that in the paroxysms blood should be taken from a small orifice, the patient being placed in the horizontal position, while the physician is to keep his finger on the pulse, to decide the limits to which venesection is carried.

During the paroxysm we may employ rubefacient frictions and external heat to the lower extremities, as being preferable to stimulants administered internally, which should be used with caution, and only to remove flatulency from the stomach. The carminative medicines, agreeable to the annexed formulæ,* may be prescribed for this purpose, when judged necessary. Possibly a tepid bath, by eliciting the blood to the surface of the body, might prove useful in relieving the central organ of circulation from the load with which it is oppressed.

Perfect quietude, a free access of pure air, the supine posture and frictions of the extremities, will assist the heart in recovering its accustomed rate of action. Should the paroxysm at any time assume the appearance of actual deliquium, it may be expedient to apply the spirit of ammonia to the nose, or to sprinkle the face, neck, and breast, with vinegar and water, or with sulphuric æther.

If the cessation of the vital principle continues long, or appears very complete, the application of a large blister to the chest will be advisable. In very desperate cases we may venture to pass slight electric shocks through it, rubbing the limbs at the same time with stimulating embrocations. Our exertions are to be continued on such occasions until the patient is reanimated, or unequivocal signs of real death are obvious.

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* 1. ℞ Aq. Menth. Pip.
Spirit. Carui, āā f. ℥ss.
—— Æther. Sulph. ♏ xx.
Tinct. Lav. C. ♍ x. M.
ft. Haustus.

Vel,

2. ℞ Aq. Pimentæ, f ℥vj.
Tinct. Card. C. f. ℥ij.
—— Cinnam. C. f. ℥j.
Spirit. Ammon. Aromat. ♍ x. M.
ft. Haustus.

* 1. Take Peppermint Water.
Spirit of Caraway, of each half an ounce.
—— Sulphuric Æther, thirty drops.
Compound Tincture of Lavender, fifteen drops.
Mix them for a draught.

Or,

2. Take Pimenta Water, six drachms.
Compound Tincture of Cardamoms, two drachms.
—— Cinnamon, one drachm.
Aromatic Spirit of Ammonia, fifteen drops.
Mix them to be taken as a draught.

With the view of rousing the patient during a state of fainting, or whilst he is just recovering from this condition, wine and other cordials have been administered by some practitioners, but there is reason to doubt if they have proved beneficial.* In the case of the late Mr. John Hunter, and reported by Sir Everard Home, i was evident that stimuli were not attended with a good effect. Both at the commencement of the spasm, and while it was on him, it appears that recourse was had to the camphor julep, but no relief was obtained. He tried Hoffman's anodyne liquor in the dose of a tea-spoonful, but not finding it to answer alone, joined it to the camphor julep. The spasms, however, seemed to be more violent. One night he took twenty drops of the tincture of opium, which occasioned his head to be greatly confused the next day, but did not at all abate the spasms. Not having drank wine for four or five years, he was advised to try it, which he complied with, but found the spasms more readily brought on after using it than on those days on which he drank none. After eating a hearty meal they were more readily produced.

Where the sleep is interrupted considerably, the extract of hyoscyamus, or some of the preparations of the humulus lupulus, (see Mania,) may be tried instead of opium, should this drug produce an injurious effect.

It has been observed, that angina pectoris is a disease always attended with considerable danger, and in many instances has proved fatal under every mode of treatment. We are given, however, to understand, by Dr. Macbride,† that several cases of it have been treated with great success, and the disease radically removed, by inserting a large issue in each thigh. These, therefore, or instituting a sufficient and permanent drain from the region of the heart by means of a seton (which appears to be preferable to issues,) should never be neglected; assisting its effects by abstemiousness, quietude of mind and body, very moderate exercise in the open air, antacids, such as soda and magnesia, gentle laxatives, and bitters conjoined with aromatics. In one case, with the view of correcting or draining off the irritating fluid, Dr. Macbride ordered instead of issues a mixture of lime water, with a little of the spiritus juniperi comp. and an alterative proportion of Huxam's antimonial wine, together with a plain, light, perspirable diet. From this course the patient was apparently mended, but it was not until after the insertion of a large issue in each thigh that he was restored to health.

Dr. Darwin likewise makes mention,‡ that four patients who laboured under angina pectoris in a severe degree, were all recovered, and continued well three or four years, by the use (as he believes) of issues on the inside of each thigh, being large

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* See Observations on Diseases of the Heart, by Mr. Allen Burns.
† See Medical Observations and Inquiries, vol. vi.
‡ See Zoonomia, vol. iv. p. 43.

enough at first to contain two peas each, but afterwards only one. They took besides some slight antimonial medicine for a short time.

Two remarkable cases of this disease are recorded in the sixth volume of the Medical and Physical Journal, which were cured by applying pieces of calico to the sternum, wetted with a solution of tartarized antimony in the proportions mentioned below,* several times a day. The stimulus from this application produced an uncommon and violent eruption on the skin in a short time, having the peculiar malignant appearance of carbuncles, itching and smarting excessively, many of which suppurated, while hundreds were continually rising up, some as large as peas, others as small as pins' heads. As soon as the eruption appeared, considerable relief from the spasmodic affections was obtained in both instances, and the patients went on gradually recovering, after continuing the remedy two or three times a day for about a month.

Having pointed out the best means for moderating and removing the paroxysms of angina pectoris, it is proper to notice those from a rigid and steady adherence to which, such as are subject to its attacks will, in all probability, experience much benefit, and these be prevented from proceeding to any alarming extent.

The patient should sedulously shun every source of mental inquietude and irritation, and the circulation be vigilantly guarded from the influence of sudden gusts of passion. Moderate exercise in the open air, particularly on horseback, which will be preferable to walking, and not likely to bring on a fit, if the rider will be content with a moderate pace, should daily and regularly be taken, but no violent or long-continued corporeal exertion should be attempted; nor should rising ground ever be ascended on foot without the utmost deliberation and care. Plain food, easily digestible, and not prone to fermentation in the stomach, should be made use of in small quantities at a time, being carefully masticated, and deliberately swallowed. All fermented liquors will be improper. Gastric distension is indeed a very frequent concomitant upon organic diseases of the heart, and a source of great uneasiness and distress to those who labour under them. The occurrence of this symptom may, however, be obviated by abstinence from fermentable aliment; and when existing, may be palliated or removed by the judicious exhibition of the mineral acids, by the carbonate of soda or potass, and by the aromatic spirit of ammonia in combination with bitters. Whenever the patient perceives any tendency to plenitude in the vascular system, he should rigidly adhere to a low and abstemious regimen, and occasionally take some purgative, such as the submuriate of

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* 3. ℞ Antimon. Tartariz. ℥j.
Aq. Fervent. Oj.
Spirit. Camphoræ, f. ℥ss. M.

* 3. Take Tartarized Antimony, 1 drachm.
Warm Water, one pint.
CamphoratedSpirit,half an ounce.
Mix them.

mercury and jalap, conjoined with a little ginger or any othe aromatic. At all times the bowels should be kept regular, and one or two daily evacuations be procured. Some relief possibly may be obtained by keeping up a permanent counter-irritation and discharge on the surface, as near as possible to the seat of the disease, by means of a perpetual blister, or by a seton passed through the integuments over the region of the heart. Warm bathing and friction of the extremities might also prove useful, by promoting circulation in the limbs, and determining to the surface of the body, thereby diminishing the fulness of the heart and large vessels. As a medicine, pills composed of the carbonate of soda, sulphate of iron, and extract of gentian, may be taken twice a day with an infusion of ginger.

Although these several means may do much to procrastinate the fatal catastrophe in some cases, still they will prove inefficacious in others.

PALPITATIO, OR PALPITATION.

This disease consists in a vehement and irregular motion of the heart, and is induced by organic affections, a morbid enlargement of the heart itself, or of the large vessels, a diminution of the cavities of its ventricles from inflammation or other causes, polypi, ossification of the aorta or other vessels, plethora, debility or mobility of the system. mal-conformation of the thorax, and many of the causes inducing syncope.

During the attacks the motion of the heart is performed with greater rapidity, and generally with more force than usual, which is not only to be felt with the hand, but may often be perceived by the eye, and in a few instances even be heard; there is frequently dyspnœa, a purplish hue of the lips and cheeks, and a great variety of anxious and painful sensations.

In some instances the complaint has terminated in death, but in many others it is merely symptomatic of hysteria and other nervous disorders, and therefore admits of a cure.

In the treatment of this disease, it should be our study, if possible, to find out the exciting cause, and to remove this. If it arises from plethora, bleeding with purgatives and the rest of the antiphlogistic course should be adopted; if from debility, stomachic bitters with chalybeates and cold bathing, &c. will be proper; when symptomatic of any nervous disorder, æther, castor, musk, and other antispasmodics, conjoined with tonics, will be advisable.

As the disease, however, arises from an organic affection of the heart itself in many instances, or of the aorta, or other large vessels connected with it, all that may be in our power in such cases will be to caution the patient against exposing herself or himself to such circumstances as may increase the action of the

sanguiniferous system, particularly fits of passion, sudden surprises, violent exercise, or great exertions of the body.

ASTHMA.

This disease is a spasmodic affection of the lungs, which comes on by paroxysms most generally at night, and is attended by a frequent, difficult, and short respiration, together with a wheezing noise, tightness across the chest, and a cough; all of which symptoms are much increased when the patient is in a horizontal position.

Asthma rarely appears before the age of puberty, and seems to attack men more frequently than women, particularly those of a full habit, in whom it never fails, by frequent repetition, to occasion some degree of emaciation. Dyspepsia always prevails, and appears to be a very prominent feature in the predisposition Its attacks are most frequent during the heats of summer, and in winter when heavy fogs or sharp cold winds prevail.

When the disease is attended with an accumulation and discharge of humours from the lungs, it is called the humid asthma; but when it is unaccompanied by any expectoration, it is known by the name of the dry or spasmodic asthma.

On the evening preceding an attack of asthma, the spirits are often much affected, and the person experiences a sense of fulness about the stomach, with lassitude, drowsiness, and a pain in the head. On the approach of the succeeding evening he perceives a sense of tightness and stricture across the breast, and a feeling of straitness in the lungs impeding respiration. The difficulty of breathing continuing to increase for some length of time, both inspiration and expiration are performed slowly, and with a wheezing noise; the speech becomes difficult and uneasy, a propensity to coughing succeeds, and the patient can no longer remain in a horizontal position, being as it were threatened with immediate suffocation.

These symptoms usually continue till towards the approach of morning, and then a remission commonly takes place; the breathing becomes less laborious and more full, and the person speaks and coughs with greater ease. If the cough is attended with a free expectoration of mucus, he experiences much relief, and soon falls asleep.

When he awakes in the morning, he still feels some degree of tightness across his breast, although his breathing is probably more free and easy, and he cannot bear the least motion without rendering this more difficult and uneasy; neither can he continue in bed, unless his head and shoulders are raised to a considerable height.

Towards evening he again becomes drowsy, is much troubled with flatulency in the stomach, and perceives a return of the diffi-

culty of breathing, which continues to increase gradually till it becomes as violent as on the night before.

After some nights passed in this way, the fits at length moderate, and suffer more considerable remissions, particularly when they are attended by a copious expectoration in the mornings, and that this continues from time to time throughout the day; and the disease going off at last, the patient enjoys his usual rest by night without further disturbance.

During the fits the pulse is not usually much affected, but in a few cases there is a frequency of it, with some degree of thirst, and other febrile symptoms. In some persons the face becomes turgid and flushed during the continuance of the fit, but more commonly it is pale and shrunk. Urine voided at the beginning of a fit is generally in considerable quantity, and with little colour or odour; but after the fit is over, what is voided is in the ordinary quantity, of a high colour, and sometimes deposits a sediment.

Asthma, but more particularly the spasmodic, is brought on by almost every thing which increases the action of the heart; and which stimulates and fills the vessels of the mucous membrane. Thus it is produced by intense heat, by lightness of air, by severe exercise, by strong mental emotions, by full meals, by stimulating drinks, by exposure to cold and atmospherical influence, and by certain effluvia, as those of hay, whether new or old, of sealing-wax, and other burning substances.

Congestions of blood, or of serous and pituitous humours in the lungs, noxious vapours arising from a decomposition of lead or arsenic, impure and smoky air, cold and foggy atmosphere, sudden changes of temperature, scrofulous, rheumatic, gouty, psoric and scorbutic acrimony; dyspepsia or irritation in some of the abdominal viscera, but particularly in the stomach: irritation of the bronchial system by aërial acrimony or other causes, suppression of long-accustomed evacuations, frequent catarrhal attacks, erratic gout, general debility, water in the chest, aneurisms, polypi, or concretions of grumous blood in the large vessels, and the like, are the causes from which this formidable disease may arise in different individuals. In some instances it proceeds from an hereditary predisposition, and in others from mal-conformation of the chest.

Asthma having once taken place, its fits are apt to return periodically, and more especially when excited by certain causes, such as by a sudden change from cold to warm weather, or from a heavier to a lighter atmosphere; by severe exercise of any kind which quickens the circulation of the blood; by an increased bulk of the stomach, either from too full a meal or from a collection of air in it; by exposures to cold, obstructing the perspiration, and thereby favouring an accumulation of blood in the lungs; by violent passions of the mind; by disagreeable odours; and by irritations of smoke, dust, and other subtle particles floating in the air.

A consequence of convulsive motions is the habit of repetition the muscles have contracted by laws peculiar to the animal economy; so asthma is believed to depend frequently upon this cause.

The proximate or immediate cause of the disease has, by Dr. Cullen, and most other writers, been supposed to be a preternatural or spasmodic constriction of the muscular fibres of the bronchiæ, which not only prevents their being so dilated as to admit of a free and full inspiration, but also gives them a rigidity, which interferes with a free and full expiration.

This doctrine has, however, been disputed by Dr. Bree, who, in a very ingenious treatise on this disease, offers it as his opinion, that irritation seated within the air-cavities, and arising either from an effusion of serum, or from aërial acrimony, is the true proximate cause of convulsive asthma. The mucus which is excreted in the course of the disease, and which has been looked upon by Dr. Cullen and others as only an effect, Dr. Bree views as a prominent cause of the paroxysm; or, when it is absent, only yielding to a different cause equally irritating to the organ, and exciting spasmodic contractions of the respiratory muscles.

Dr. Darwin says, that whatever may be the remote cause of the paroxysms of asthma, the immediate cause of the convulsive respiration, whether in the common asthma, or in what is termed the convulsive, which are perhaps only different degrees of the same disease, must be owing to violent voluntary exertions to relieve pain, as in other convulsions; and the increase of irritability to internal stimuli, or of sensibility during sleep, must occasion them to commence at this time.

Asthma usually diminishes as soon as a mucous secretion begins to take place, and is more speedily and effectually relieved by a spitting of blood. These facts are convincing proofs of a preternatural fulness of the vessels of the mucous membrane of the bronchiæ, so as to impede free respiration, and to produce all the symptoms of spasmodic asthma.

The sudden accession of the paroxysms generally after the first sleep, their returning at intervals, and the sense of constriction about the diaphragm, occasioning the patient to get into an erect posture, and to fly for relief to the cold air, will readily distinguish asthma from other diseases.

If the attacks of asthma are neither frequent nor severe, the constitution unimpaired, and the patient is young, there may be a possibility of removing the disease entirely; but where it comes on at an advanced period of life, has frequent paroxysms, and proceeds either from an hereditary predisposition, or from a condition of the body subject to serous defluxions, it will be impossible to eradicate it. By changing into other diseases, as consumption and hydrothorax, or by occasioning an aneurism of the heart or of some large vessel, it is apt to prove fatal; but without such occurrences it is by no means attended with much danger, although it may seem in

many instances to threaten almost immediate death by suffocation. Anasarcous swellings of the lower extremities, and some degree of diabetes, are complaints which frequently attend on asthma, where it has been of long duration.

The respiration becoming suddenly quick and short, the pulse weak and irregular, paralysis of the arms, great depression of strength, a scanty secretion of urine, and frothing at the mouth, indicate extreme danger.

The inspection of dead bodies has thrown but little light either on the nature or cause of this disease. A series of observations from Morgagni, and the works of many other anatomists, have however proved the existence of extravasated serum in the vesicles of the lungs of asthmatics, in most instances. Where the disease has been of long continuance, various morbid affections of the system have been discovered on dissection.

In the treatment of asthma we should endeavour to moderate the violence of the paroxysms, and when they are subsided, to hinder their recurrence. With the view of preventing any danger from the difficult transmission of blood through the lungs, and of obviating the plethoric state of the system, which might be supposed to have a share in producing a turgescence of the blood in the lungs, it is a frequent practice to draw off blood during the paroxysm; but bleeding has proved highly injurious in almost every instance of the disease, by delaying the expectoration; and is certain to be attended with bad consequences, where asthma has arisen in elderly persons, or has been of long standing. In full plethoric habits, possibly cupping, or applying several leeches to the chest, might afford some relief.

On blood-letting, Dr. Bree makes the following judicious observations:—"Many doubts," he says, "occur on the propriety of bleeding in any species of this disease. Before the pulmonary vessels have attempted to relieve themselves by their exhaling orifices, blood may possibly be drawn with advantage; but when effusion has taken place, a certain debility is indicated, and a loss of contractile power in the coats of the vessels, which prudence will rather submit to during the fit, and attempt to remedy in the intermission. In this state of the disease, nature pursues the path best adapted to her circumstances: the escape of serous fluid gradually relieves the vessels, and respiration and absorption must be relied on, with a salutary cough, to clear the air-cells of the lymph. If evacuations of blood are directed, the sudden depletion of the vessels will leave their coats without the stimulus necessary to produce a contraction equal to the space which the blood had occupied; the heart will participate in the injury, and will also be deficient in vigour of contraction. If, therefore, blood is to be taken away, it should be drawn from the vessels at intervals, and in small portions, which would allow of the contractile power being exerted in proportion as the vessel loses its contents, and would not finally take so much

fluid away as would leave it without the stimulus of distension, so essential to the return of health.

"But bleeding is an imprudent operation in every species of asthma, unless it be the second. In the first species I have repeatedly directed it; but have never had reason to think that the paroxysm was shortened an hour by the loss of blood: and I have often been convinced that expectoration was delayed, and more dyspnœa remained in the intermission than was common after other paroxysms. In old people who have been used to the disorder, it is certainly injurious. In the second species there are occasional topical inflammations, which this operation may relieve; but if it is carried far, there is the strongest reason to apprehend that the patient may be plunged into asthma of the first species."

That the reader may have a clear idea of Dr. Bree's meaning, it is necessary to say that he divides convulsive asthmas into four species:—

The first species, arising from pulmonic irritation of effused serum.

The second species, arising from pulmonic irritation of aërial acrimony.

The third species, arising from abdominal irritation in the stomach, uterus, or other viscera.

The fourth species, secondary and dependent upon habit, after irritation is removed from the thoracic or abdominal viscera.

Purging is attended with the same injurious effects as bleeding, in all species of this disease; but as asthmatics are hurt by an accumulation or stagnation of matters in the alimentary canal, so costiveness must be obviated by a proper attention to diet; and where this proves insufficient, by the employment of gentle laxatives, such as magnesia, with the addition of a few grains of rhubarb, as asthma will be relieved by gently opening the bowels. During a paroxysm, costiveness may be removed by an emollient clyster with an addition of assafœtida,* or the ol. terebinthinæ, which proves so efficacious in hysteria.

It might be attended with some danger to administer an emetic during a paroxysm of the asthma; particularly where the respiration is considerably impeded, the patient's strength much exhausted, or where there are symptoms of inflammation.

Blistering the chest and issues have been much employed in asthmatic cases, but they seem only to be serviceable in those which have arisen from the stoppage of some long-accustomed or habitual discharge, or in the complicated cases of old people. In

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* 1. ℞ Decoct. Malvæ Compos.
Misturæ Assafœtid. āā f. ℥v.
Ol. Ricini, f. ℥ss. M.
ft. Enema.

* 1. Take Compound Decoction of Marshmallow,
Mixture of Assafœtida, of each five ounces.
Castor Oil, half an ounce.
Mix them for a clyster.

pure spasmodic asthma they have not been found either to prevent or relieve the fit.

To moderate the severity of the paroxysms in asthma, we cannot employ a more powerful and efficacious mean of relief than the inhaling warm steam frequently from an inhaler, or the spout of a teapot. An infusion of chamomile flowers, with the addition of a little æther, may be used on the occasion, or the patient may inhale the vapour arising from a tea-spoonful of Hoffman's anodyne and another of tinctura opii, mixed with a little warm water.

In spasmodic asthma, smoking tobacco has in some cases proved very beneficial. Of late the stramonium, or thorn-apple, has been much employed in the same manner in spasmodic asthma, and from the striking relief procured by it, has excited considerable attention. The roots of the plant are chiefly used: these, after being dried in the shade, and beaten so as to separate the fibres, are to be cut into small pieces, and to be smoked in a common tobacco-pipe. The smoke is to be drawn as much as possible into the chest, where it usually occasions some degree of heat, followed by expectoration. There can be no doubt that it acts as a narcotic; but I have observed it to produce more powerful effects on the disease in question than the smoke of tobacco. As some unpleasant consequences have, however, attended on an improper use of stramonium, it has been suggested that every good property of this plant may be expected from a similar use of the common white poppy heads; the smoke of which, whether swallowed or inhaled, must be equally anodyne and less deleterious. Similar effects would probably result from the dried leaves of digitalis, and particularly in that species of asthma connected with œdematous ankles, irregular pulse, and other symptoms of hydrothorax.

Inhaling the vapour from tar under a state of liquefaction, as noticed under the head of Phthisis, has been attended with a pleasing effect in some cases of spasmodic asthma.

Under the supposition that asthma arises frequently from predisposition, or from a preternatural mobility or irritability of the lungs, antispasmodics have been much used to moderate the paroxysms. Of this class, æther and opium have been found most useful, and particularly the latter; but its value is frequently much enhanced by combining it with the former, as below *

These medicines seem, however, to have no certain efficacy in shortening the paroxysms, except in those cases where the disease arises from a preternatural mobility or irritability of the lungs, or is continued from habit. In these instances they may prove highly serviceable, but in no others. The fetid gums, particularly assafœ-

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*2. ℞ Misturæ Camphor. f. ʒx.
Spirit. Æther. Sulphuric. ℥ xxv. —xl.
Tinct. Opii, ♏ x. M.
ft. Haustus, 4ta vel 6ta quaq. hora sumendus.

*2. Take Camphor Mixture, ten drachms.
Spirit of Sulphuric Æther, forty to sixty drops.
Tincture of Opium, fifteen drops.
Make them into a draught, to be taken every four or six hours.

tida,* have also been much employed in those cases of asthma where a spasmodic difficulty of breathing is obvious.

Dr Bree mentions, "that having been afflicted with asthma, he took during a paroxysm of the first species four grains of solid opium, which produced nearly an apoplectic stupor for two days. After a few hours, the most debilitating sickness came on, with incessant efforts to puke. The labour of the respiratory muscles was abated, but the wheezing evidently increased; a countenance more turgid than usual, and intense headach attended. The pulse was increased in strength and quickness for a few hours, but then sunk into great weakness."

He further observes, "that the paroxysm showed itself four hours earlier than usual the next day, and two grains more were taken when it was perceived to commence; respiratory labour seemed again to abate, but the anxiety increased to an alarming degree as the stupor became less. The pulse was now weaker, and frequently irregular. Loose motions succeeded, and a general sweat. The energy of the paroxysm then revived with exquisite distress. A medical friend, who attended with great care to the progress of those trials, became alarmed, and endeavoured to promote puking without effect. Blisters were applied, and draughts of vinegar and pepper were given, interposed with strong coffee and mustard. The patient was at last brought back to a state more usual in former paroxysms: but with every care, the exacerbations were no fewer than nine, before expectoration, becoming gradually more copious, concluded the fit. Notwithstanding the bad success of this experiment, opium was used in another paroxysm after an active vomit, and bad consequences still ensued, though not so extensively."

As the free passage of air to and from the lungs is obstructed in the first species of asthma by a lodgment of mucous matter, the expulsion of this should be promoted by pectorals, such as gum ammoniac, squills, &c., combined as below,† or as prescribed under the head of Peripneumony; but oily demulcents ought to be avoid-

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* 3. ℞ Misturæ Assafœtidæ,
——— Camphoræ, āā ℥vj.
Spirit. Æther. Sulph. ♏ xx.
Tinct. Opii, ♏ vj. M.
ft. Haustus, quartis vel sextis horis capiendus.

* 3. Take Assafœtida Mixture,
Camphor Mixture, of each six drachms.
Spirit of Sulphuric Æther, thirty drops.
Tincture of Opium, nine drops.
Mix them, and let this draught be taken every four or six hours.

† 4. ℞ Misturæ Ammon. f. ℥v.
Oxymel. Scillæ, f. ℥ij.
Vini Antimon. Tartariz. ♏ xxvj.
Acidi Acetic. dilut. f. ℥ss. M.
ft. Mistura, cujus sumat cochl. ij. subinde, vel urgenti tusse aut dyspnœa.

† 4. Take Mixture of Ammonia, 5 ounces.
Oxymel of Squill, 3 drachms.
Wine of Tartarized Antimony, forty drops.
Distilled Vinegar, half an ounce.
Of this mixture, let two table-spoonsful be taken occasionally, or when either the cough or shortness of breath is troublesome.

ed, as being injurious. A decoction of madder-root has in some cases been used as an attenuant and expectorant with a good effect.

In most cases of asthma, dyspepsia is a prominent symptom, and the patient is much troubled with flatulency of the stomach, acidities, and other symptoms of indigestion. To remove these, it will be necessary to make use of absorbents with stomachics and bitter infusions, as recommended under the head of Dyspepsia. Dr. Bree observes, that chalk and opium will astonish the asthmatic, by the excellence of their effects, when the irritation proceeds from dyspepsia of the first passages only. Vinegar separately exhibited was likewise found by him to counteract the flatulence and distension of the stomach.

Diaphoretics, such as tartarized antimony, &c., are a class of medicines which may prove useful in that species of asthma which is dependent upon pulmonic irritation of aërial acrimony, by promoting exhalation from the vessels of the lungs. Small doses of opium may be conjoined with a good effect, as in the pulv. ipecac. c. and the patient should not be subjected to the influence of irritating causes, such as are known to exist in towns and manufactories. Warm pediluvia may likewise be ordered.

The digitalis is a medicine which has frequently been administered in asthma. In the fourth volume of the Medical and Physical Journal, page 329, mention is made of a case by Dr. Sugrue, of Cork, in which its salutary effects were speedily and decisively produced. The tincture (as advised to be prepared by Dr. Darwin) was the preparation had recourse to, and this was administered in doses of fifteen drops, repeated twice a day. We are informed, that when his patient applied for advice, he was pale and emaciated; complained much of a sense of suffocation and tightness about the chest; he scarcely slept; but after dosing about an hour on going to bed, he awoke very much oppressed, was obliged to sit up in the bed during the remainder of the night, and very often believed that he could not live until morning. His pulse was about 120, and very feeble.

Dr. Sugrue states, that he put him under a course of the digitalis, as just mentioned. As he lived in a remote part of the city, he did not see him again for a fortnight; at the end of which time he

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Vel,

5. ℞ Misturæ Ammoniac. f. ℥i.
Liquor. Ammon. Acetat. f. ℥ij.
Vini Antimon. Tartarizat. ♏ x.
Syrup. Tolutan. f. ℥i. M.
ft. Haustus, sextis horis adhibendus.

Vel,

6. ℞ Pilul. Scillæ Comp. gr. x. fiant pilulæ duæ, sextis horis capiendæ.

Or,

5. Take Mixture of Ammoniac, 1 ounce.
Solution of Acetate of Ammonia, two drachms.
Wine of Tartarized Antimony, fifteen drops.
Syrup of Tolu, one drachm.
Mix them, and take the draught every six hours.

Or,

6. Take Compound Squill Pills, two, consisting of five grains each.

again called upon him. The remarkable change which had taken place in his appearance was astonishing; he had got rid of the wheezing and oppression at his chest; his countenance was much fuller, and his complexion much less pale; his pulse was about 90, and tolerably strong. It appears from the account the patient gave of himself, that after he had taken the medicine about three days, he no longer felt himself obliged to sit up at night, but was able to take a comfortable nap, after which he felt himself refreshed; a sensation with which he had been for some months unacquainted. At the expiration of a week he could sleep five or six hours, and his appetite and strength improved in the same proportion: he no longer experienced the necessity of stopping to take breath on ascending an eminence. From continuing the medicine, he was, at the time of making this report, in better health than he had been for ten years before.

We are further informed by Dr. Sugrue, that in every other case of asthma in which the digitalis was exhibited by him, the most violent symptoms were mitigated, and the general state of health visibly improved. One effect which took place in every patient, and which particularly attracted his attention, was, that the expectoration was diminished, and at the same time the necessity of it seemed to be removed, which showed how different its action was from that of antimonials. Another striking difference between its action and that of antimonials was, that it appeared less efficacious in relieving the symptoms of asthma in those cases in which it produced nausea or vertigo. The digitalis in conjunction with opium, by suspending the symptoms, has been found highly serviceable in some cases of spasmodic asthma.

It does not admit of the smallest doubt but that a combination of digitalis with opium has proved highly advantageous in spasmodic asthma, when given in the dose of half a grain of each every four or five hours. I have tried it, and found it to answer in two or three cases. In the pituitous asthma, squill combined with foxglove* might be more advisable.

Spasmodic asthma, as also dry convulsive cough, and chronic catarrh, are much relieved by a use of Prussic acid, which under a failure of other remedies may be given, as advised under the head of Phthisis.

In asthma arthriticum there are usually intermissions and other irregularities of the pulse, great anxiety of countenance, with a blueish tinge thereon. Large doses of opium, æther, camphor, and

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* 7. ℞ Pulv. Digitalis, gr. vj.
Pilul. Scillæ Compos. ℈ij.
Syrup. Tolutan. q. s. M.
ft. Massa, in pilulas xij. distribuenda, quarum unam capiat ter quaterve in die.

* 7. Take Powder of Foxglove, six grains.
Compound Squill Pill, two scruples.
Syrup of Tolu, a sufficiency to form a mass, to be distributed into twelve pills, of which let the patient take one three or four times daily.

ammonia, are the medicines most likely to afford relief. Sometimes we may be forced to bleed the patient, and often to apply a blister to the chest. To assist these means we may add very warm pediluvia and the inhalation of the vapour arising from hot water.

Besides the means which have been recommended to be employed during a fit of asthma, it may be necessary to mention, that recourse has been had to the assistance of pneumatic medicine; and that the gases, or factitious airs, have been much used by a few physicians, but more particularly by the late Dr. Beddoes and Dr. Thornton. By the former of these gentlemen we are told, that such is the miraculous effect of oxygen vital or dephlogisticated air, when applied in asthma, that no sooner does it touch the lungs, than the livid colour of the countenance disappears, laborious respiration ceases, and the functions of all the thoracic organs go on easily and pleasantly again.

Of pneumatic remedies, Dr. Bree speaks with little confidence as to their efficacy in curing asthma. He however proposes oxygen as an auxiliary with other means of relief in that species arising from mucous irritation. In the dry asthma, oxygen was observed by him to be manifestly hurtful, and hydrogen and hydrocarbonate were tried without benefit.

We are told by a modern writer,* that he experienced no other means employed at the Worcester Infirmary to have been so efficacious in relieving habitual asthma as galvanism. In common cases it was used once a day: in those of a more severe nature, where the dyspnœa is great, it may be employed morning and evening.

Such are the remedies to be employed during a paroxysm of asthma; but in the intermissions we should have recourse to tonics, such as the cinchona bark, bitter infusions, chalybeate waters, and preparations of iron, particularly the ferri subcarbonas, and ferri sulphas, various formulæ of which will be found under the head of Dyspepsia. To assist the effects of these remedies, cold bathing may be used during the intermissions; and where this cannot be obtained, washing the breast frequently with cold water may probably be of some service. In addition to other tonics, exercise either in swinging, sailing, riding in a carriage, or on horseback, but particularly the latter, together with a change of air, will be beneficial to asthmatics: they should try different situations until by perseverance one is found out to live in, in which the disease is rendered less distressing, or is entirely removed. Their clothing should be warm, and flannel be worn next to the skin.

Whatever preparation of iron we may employ, it should always be given in small doses at first, increasing the quantity by degrees. If heat or any other unpleasant symptom is occasioned by it, its

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* See Experimental Inquiry into the Laws of the Vital Functions, &c. by A. P. Wilson Philip, M. D. p. 329.

use must be suspended for a time, and saline draughts with opium be substituted. A want of firmness in continuing the use of tonics, when properly indicated, is however a great source of their discredit. In case of some temporary inconvenience being experienced from employing any particular medicine, or form, the practitioner should change it for another, never abandoning the general intention of strengthening the system, and thereby preventing a return of the disease.

As in many cases of asthma, and perhaps in the great majority of them, some effusion of serum into the lungs takes place, and the disease being long protracted, particularly at an advanced age, is very apt to terminate in hydrothorax, it would appear that digitalis combined with the other remedies which have been mentioned, during the intervals of the paroxysms, will be a very judicious mode of treatment. Indeed, its diuretic powers on such occasions have in many cases produced a happy effect.

During the intervals of asthmatic paroxysms, the bowels are to be kept open and regular by gentle aperients, such as rhubarb, magnesia, and manna, and all exciting causes are carefully to be avoided. The flatulency accompanying asthma is to be relieved by alkalies and absorbents, various formulæ of which are inserted under the head of Dyspepsia. Sometimes a small portion of diluted acetic acid will remove flatulency.

Emetics, by their determining the blood from the lungs to the surface of the body, and their supposed power of assisting expectoration, have been thought highly useful in all species of asthma, except that which depends on habit. A vomit given in the evening, when a fit has been expected to come on in the night, has in some instances appeared to prevent its attack. It therefore seems an advisable practice to make use of gentle emetics during the intervals of the paroxysms, and to repeat them from time to time. Ipecacuanha being milder and more certain in its operation than any of the preparations of antimony, should have a preference given to it.

In the intervals of the attacks, it will be highly necessary for the patient to avoid the various exciting causes; to keep the digestive functions in a proper state; to guard against atmospherical vicissitudes, and to keep up a regular and uniform excretion from the pores of the skin by flannel: lastly, to maintain as even a state of mind as possible, remembering that asthma is more alarming than dangerous, and that it rarely proves fatal, unless when complicated with, or in inveterate cases terminating in, some organic disease of a vital organ.

A dry and settled atmosphere is most friendly to asthmatical people, not only because it is free from impure vapours, but also as having more elasticity to press upon the vesicles of the lungs. While some asthmatical persons cannot live, however, with any comfort in the atmosphere of large cities, there are others again who feel themselves better in an air replete with gross effluvia, and

breathe with greater ease in a crowded room where there are several candles and a fire. Indeed the removal from a cold to a warm climate is sometimes found beneficial.

In every species of asthma the patient's diet should consist of such things as are light and easy of digestion, carefully avoiding at the same time whatever may tend to generate flatulency: and as many kinds of vegetables are apt to be attended with this effect, they are almost all improper. Animal food of the lightest kind, taken in a moderate quantity, so as not to overload the stomach, will be the most proper for asthmatics; and for ordinary drink they may use toast and water, or other cool watery liquors. All vinous, spirituous, and fermented liquors, will be injurious to them. Tea will likewise be improper, from its being usually drank warm, and from its supposed power of weakening the nerves of the stomach. Coffee has been employed in asthma with much advantage when taken in a powerful dose. In the pure spasmodic kind, if made so strong as an ounce to the cup, without milk or sugar, and repeated, if necessary, at the distance of a quarter or half an hour, the fit has been entirely removed; and this practice has been continued by patients labouring under the disease for years, affording certain relief to their paroxysms. Some practitioners have, however, disapproved of the use of coffee.

Garlic is a vegetable production which is found of service to asthmatical people. Acids usually agree with them.

HYDROPHOBIA, RABIES, OR CANINE MADNESS.

THE commencement of hydrophobia is marked by unusual anxiety, timidity, and sighing, severe pain in the epigastric region, difficult and painful deglutition of all liquids, accompanied by a sense of suffocation, dryness of the tongue and fauces, a small weak pulse, and slight pyrexia: its progress and close, by continual watching, laborious respiration, intolerance of light and the motion of air, a discharge of viscid saliva from the mouth, and not unfrequently by convulsions.

The disease arises from the introduction of a small portion of the poison by the bite of a rabid animal, and that commonly of the canine or cat kind, as being those which are most domesticated. Some of the old writers have asserted that it has occurred from the contact of the saliva with the skin, without the intervention of the poison of a rabid animal, and independently of any bite, or the infliction of any apparent injury: but the possibility of this I much doubt. At any rate, the occurrence is to be considered as very rare indeed.

There can be no doubt, however, but that symptoms exactly resembling those of the genuine rabies canina have arisen in the human body from other causes. Local irritation from wounds in irritable habits, especially when conjoined with a perturbed state

of the passions, and also violent affections of the mind, independently of corporeal injury in hysterical and hypochondriacal constitutions, have at times produced all the pathognomic symptoms of canine madness. Violent alternations of heat and cold, and all other causes which induce great debility, and at the same time increase the irritability of the system, have also at times proved adequate to the production of symptoms exactly corresponding with those of rabies. Such cases have been denominated by medical writers, spontaneous hydrophobia.

A few have gone so far as to doubt the existence of this affection, as arising from the bite of a rabid animal and an absorption of the virus, contending that all the phenomena witnessed in this terrific malady may be referred to nervous irritation, from terror and apprehension of its occurrence, and are wholly independent of the saliva, *erroneously*, they think, considered poisonous: but the fallacy of this hypothesis has been most satisfactorily ascertained.

Many have doubted whether madness can arise in animals without preceding contagion. Some cases recorded by M. Rossi in the Mem. de l'Academie de Turin, tom. 6ième, evidently demonstrate, however, that animals previously healthy become capable, when enraged or irritated to a high degree, of communicating disease by their bite; a circumstance which, although long credited by the vulgar, wanted the support of direct evidence to establish it satisfactorily.

The fact of rabies sometimes arising spontaneously appears to be decidedly established by Mr. James Gillman:* for he records an instance where a dog that was chained in a yard, without any kind of intercourse with animals capable of inoculating the disease upon him, had it in its genuine form, which was verified by the effect produced by his saliva.

Food of a highly putrid nature, a deficiency of water to assuage thirst, severe exercise during very sultry and dry weather, and a certain state or peculiarity in the atmosphere similar to what produces epidemics of other kinds in the brute species, may possibly be capable of giving rise to madness in the canine and cat species, as well as a long continued worrying of the animal. Some physicians, however, are disposed to dispute the efficiency of these remote causes; and maintain the actual infection from a diseased animal, by an inoculation of the poison, to be the sole exciting cause. There are, however, strong presumptive proofs that rabies does originate spontaneously in some quadrupeds; and carnivorous animals seem most, if not alone, liable to it as a spontaneous disease.

It does not appear, however, that madness is so prevalent among dogs in warm climates as in cold ones; for during a resi-

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* See his Dissertation on the Bite of a Rabid Animal.

dence of many years in the West Indies I never met with a single occurrence of the kind.

We are also informed by various writers, that canine madness is a stranger to South America; and according to the testimony of Volney* it is equally unknown in Egypt and Syria. Mr. Barrow† also tells us, that notwithstanding the heat of the climate at the Cape of Good Hope, and though the dogs are fed in the interior by the Caffres on meat in a highly putrid state, still the disease is unknown there. It is likewise mentioned by a missionary, that canine madness is a malady unknown in Paraguay, a country where beasts of every description are frequently destroyed both with the burning heat of the atmosphere and long thirst for want of water: which last is not to be obtained for many leagues in some places.

Rabies seem to arise from a specific contagion, which being once produced by causes unknown, continues to be propagated by the intercourse which dogs have with one another. It is alleged that the distemper is not communicable from one hydrophobous person to another, by means of a bite or any other way; but this seems to require further confirmation.

The possibility of reproducing this disease by inoculation of the quadruped with virus secreted in the human system, had long remained a doubtful fact, having often been tried without success; but this point seems now determined by Messrs. Magendie and Bresslet‡ having succeeded in affecting a dog with rabies, by inoculating him with the saliva of a man under that disease.

We have no proof that any of the secretions of a rabid animal but the saliva can excite hydrophobia. It is known to a certainty, that the specific poison of rabies exists in the saliva, but it has been a question how far the fluids and solids have been generally contaminated. The experiments of Mr. Gillman have furnished results which go far to prove that the infecting material of rabies is hardly to be found but in the saliva.

A large portion of such persons as have really been wounded by the bite of a rabid animal are never affected with the disease. Mr. Hunter mentions an instance of twenty persons being bitten by the same dog, and only one was seized with it. It is therefore obvious, that different persons are not alike predisposed to be acted upon by the same contagion, and likewise that the predisposition to receive contagion varies in the same person at different periods. The depressing passions, as well as other causes producing debility, probably may predispose the system to the action of this virus.

In the canine and cat species, about seven or eight days may be considered as a fair average of the shortest period in which rabies

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* See his Travels, vol. i.

† ——————— into the Interior of Africa and the Cape of Good Hope.

‡ See London Medical Repository, vol. iv. p. 35.

shows itself after the animal is bitten, and six or seven weeks the longest period from the date of the bite. In the human species, only a few days have in some instances elapsed previous to the symptoms showing themselves; but the most common time of their appearance is from twenty to forty days after the bite. There are no well-authenticated instances of the poison lying dormant longer than eleven or twelve months; and we may therefore consider a person pretty safe at the expiration of a year without any symptom appearing.

In the cases quoted by authors where canine madness is said to have occurred at the distance of many years from the communication of the supposed poison, we may justly consider them either as instances of spontaneous hydrophobia, as before mentioned, or as such other diseases as occasionally exhibit the anomalous symptoms of an inability to swallow fluids, and an aversion to the sight of them: the poison of a rabid animal has had no share in their production. The frequent occurrence of an aversion to fluids, and of great difficulty in swallowing them in women affected with hysteria, have been noticed by many writers, and some of these facts demonstrate that all the symptoms of canine madness have been brought on by violent affections of the mind in irritable and delicate habits. Thef atal termination of some of these instances, tends further to confirm the strictness of analogy between rabies and hysteria. Possibly some cases also of tetanus, in which there has been much local irritation in an excitable habit, conjoined with a perturbed state of the passions, may have been mistaken for hydrophobia, by exhibiting symptoms exactly corresponding with those of rabies canina.

Rabies in a dog is attended with the following appearances:—he generally shows some marked deviation from his accustomed habits. In those which are domesticated, as lap-dogs, some strange peculiarities have been observed, as the picking up of the different little objects, such as paper, thread, straw, &c., or any thing which may happen to be presented to their notice. Sometimes they show a depraved appetite, and eat their own excrement, or lap their own urine. Still, however, in this stage they seldom attack any person unless irritated to it. Although a diseased dog often observes the usual obedience to his master, and evinces the same attachment, still he is usually extremely irritable, and always treacherous, suffering any one to fondle him, but suddenly snaps or bites with the smallest provocation. In the progress of the disease, his eyes sometimes become inflamed, a purulent discharge issues from the lids. Instead of barking, he often makes a dismal howl, and has usually a listless and melancholy appearance.

The term hydrophobia, as applied to dogs, is highly exceptionable, as the animal, instead of showing any dread of water, which has generally and popularly been considered as marking the disease, seeks it in most instances with avidity, and laps it incessantly.

A late writer* on the diseases of dogs very justly notices the evil that this opinion has led to in lulling into dangerous security persons bitten by dogs actually rabid, and in particular refers to an instance in which an eminent physician, on being consulted by a person who had been bitten, recommended that no precautions might be taken, because he was informed the dog could drink. Another absurd popular error noticed by this writer, is the opinion that the worming a dog, which is merely removing the frænum from the tongue, will prevent his becoming rabid at any future time.

As rabies advances, the animal becomes extremely anxious and impatient, and has an inordinate desire to gnaw every thing around him. When chained or confined, he uses his utmost endeavours to break loose, and if he succeeds, he wanders about seeking other animals to bite, particularly some of his own species. It has before been observed, that frequently he does not avoid water, but laps it greedily; still in this stage of the disease he is often deprived of the power of swallowing it. Very often he has the appearance of being paralytic behind, and labours under an inflammation in his bowels, which occasions him to sit on his rump, seemingly in great pain. In the last stage, all the preceding symptoms are highly aggravated; he now becomes very feeble, his jaws drop as if paralyzed, and the saliva runs from his mouth; he wanders or rather staggers about with scarcely the power of biting, and at length being exhausted by disease, generally dies on the fourth or fifth day from its commencement. Few dogs survive the seventh.

In the human species, the general symptoms attendant upon the bite of a mad dog, or other rabid animal, are :—

The part bitten after some time begins to be painful; then come on wandering pains, with an uneasiness and heaviness, disturbed sleep and frightful dreams accompanied with great restlessness, sudden startings and spasms, sighing, anxiety, and a love of solitude. These symptoms continuing to increase daily, the cicatrix of the wound becomes hard and elevated, a peculiar tingling sensation is felt in the part, and pains begin to shoot from the place which was wounded, all along up to the throat, with a straitness and sensation of choking, and a horror and dread at the sight of water and other liquids, together with tremors. The person is, however, capable of swallowing any solid substance with tolerable ease; but the moment that any thing in a fluid form is brought in contact with his lips, it occasions him to start back with much dread and horror, although he labours, perhaps, under great thirst at the time.

This appears to be a circumstance peculiar to the human race; for rabid animals do not evince any dread at water. It has indeed been remarked by a late writer,† (and very justly in my opinion)

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* See Canine Pathology, by Mr. Delabere Blaine, Professor of Animal Medicine.

† See Dr. Marshall's Anatomy of the Brain, p. 80.

that the dread expressed, is not of the water, but of the act of deglutition. It may, however, be said, that the very sight of water produces this dread; but in that case the sight of the water associates with it the idea of deglutition.

Many other practitioners are also of opinion that this peculiar symptom of starting back with horror at the sight of water and other fluids, does not proceed from any dread of them, but from the fear of swallowing them, owing to the diseased state of the parts in consequence of inflammation. To swallow liquids, a greater contraction of the muscles of deglutition is requisite than to get down solids, and of course it produces a higher degree of pain and spasm, which explains the greater capability in the patient of being able to swallow solid substances than fluids.

Dr. Vaughan denies, however, that the excruciating pain, which never fails to attend every attempt to drink, is felt in the fauces and throat. He says that it is the scrobiculus cordis which is principally affected, this being the part to which the patient always applies his hand. From this circumstance, therefore, from the presence of risus sardonicus, from the muscles of the abdomen being forcibly contracted, and from the sense of suffocation which seems to threaten almost immediate death, he is led to think, that in hydrophobia a new sympathy is established between the fauces, the diaphragm, and the abdominal muscles.

Dr. Rush, from some appearances which he observed on dissecting a boy who died of hydrophobia, from the bite of a mad dog, has been induced to suppose that it is the temporary closure of the glottis which produces the dread of swallowing liquids; hence the reason why they are taken in suddenly and at intervals. The same danger and difficulty attend swallowing the saliva; and hence, he thinks, the symptom of spitting proceeds, which has been so often noticed in hydrophobia. In the case here alluded to, the morbid appearances were as follow: the epiglottis was inflamed, and the glottis so thickened and contracted, as barely to admit of a probe of the common size. The trachea below it was likewise inflamed and thickened, and contained a quantity of mucus in it. The œsophagus exhibited no marks of the disease, but the stomach had several inflamed spots upon it.

Dr. Parry is of opinion,* that the part which is primarily affected, so as to give rise to the symptom denominated hydrophobia, is not the pharynx, œsophagus, or stomach, but the upper portion of the trachea, together with other parts of the apparatus concerned in the function of respiration.

In the course of the disease a vomiting of bilious matter comes on, and intense high fever ensues, attended with continual watching, great thirst, dryness and roughness of the tongue, hoarseness of the voice, and the discharge of a viscid saliva from

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* See his Cases of Rabies Contagiosa and Tetanus.

the mouth, which the patient is constantly spitting out; together with spasms of the genital and urinar organs, in consequence of which the evacuations are sometimes forcibly ejected. In general he is incapable of enduring light, or the motion of the air; his respiration is laborious and uneasy, but his judgment is unaffected, and as long as he retains the power of speech his answers are distinct. In some few instances a severe delirium arises, and closes the tragic scene; but it more frequently happens, that the pulse becomes tremulous and irregular, that convulsions arise, and that nature, being at length exhausted, sinks under the pressure of misery.

Our prognostic in this disease must always be unfavourable, as in most instances all means whatever have proved ineffectual. Death commonly takes place about the third or fourth day from the first appearance of the symptoms.

The appearances to be observed in the human species on dissection in hydrophobia are, unusual aridity of the viscera and other parts; marks of inflammation in the lower portion of the œsophagus and cardiac extremity of the stomach, and even in the stomach itself. Some marks of inflammation are likewise to be observed in the brain, consisting in a serous affusion on its surface, or in a redness of the pia matter; which appearances have also presented themselves in the dog. Now and then we meet with an accumulation or effusion of blood in the lungs. In some cases of dissection, not the least morbid appearance has been observed either in the fauces, diaphragm, stomach, or intestines. The poison has therefore been conceived by some physicians to act upon the nervous system, and to be so wholly confined to it, as to make it a matter of doubt whether the qualities of the blood are altered by it or not, or whether the poison at all enters the system by the absorbents. As far as my knowledge extends, the lymphatic glands in the course of absorption have never been found diseased. On the development of the symptoms of hydrophobia, the pain beginning in the bitten part appears indeed to follow rather the course of the nerves than that of the absorbents.

On opening rabid animals, slight marks of inflammation about the epiglottis and pylorus, with occasionally some livid marks in the villous coat of the stomach, are now and then to be observed, but sometimes no appearances of inflammation either in the stomach or elsewhere are to be observed, on inspecting the bodies of these animals.

As in rabies, when once manifested in the system, the power of medicine and all human skill have failed in most instances, our views should be early directed to prevent the accession of the disease; and for this purpose the most effectual is excision of the wounded part, with free ablution and scarifications. Immediately, therefore, on the infliction of the bite, or as soon afterwards as possible, ablution with water and soap should be had recourse to, and be continued until professional aid is procured. On the arrival

of the surgeon, a free and complete excision of the bitten part is to be made, taking care to carry the knife to a sufficient depth, so as to insure its complete removal. The excised part being removed, ought carefully to be examined to see if there is any place in the piece through which the dog's teeth appear to have passed; and in case there is, the excision ought to be carried still deeper than before. Should the knife, on a close examination, appear to have entered the wound made by the dog's teeth, it may be advisable to recommence the operation with a clean knife, lest the other should be contaminated by its having entered the wounded parts, and by which the sound ones might become inoculated with the canine virus.

The sooner that the wounded part is extirpated after the accident the better; but it will be right to do it even at the distance of several days, rather than that the person should be debarred of the chance which excision affords; as there is great reason to presume that the canine poison does not enter the system so quickly as a variety of others are perceived to do.* This conclusion we are somewhat authorized to draw, as in several well-attested cases, many weeks, nay months, have intervened between the accident of being bitten, and the appearance of the disease. If the bite be of long standing, and the wound consequently cicatrized, and there be a certainty that the animal by which it was inflicted was really rabid, it should immediately be laid open, cauterized, and caused to suppurate.

Dr. Darwin observes,† that if the patient is bitten in a part which could be totally cut away, as a finger, even after the hydrophobia appears, it is probable it might cure it, as he suspects the cause still remains in the wounded tendon, and not in a diffused infection tainting the blood. Hence there are generally uneasy sensations in the old cicatrix before the hydrophobic symptoms commence.

Even in cases where assistance has not been requested until the consequent disease has already appeared, I am of opinion that the wounded parts should be excised: for if the excision of the part, in which the virus of small pox, syphilis, or any similar disease is deposited, after the local action has evidently commenced, prevents absorption, and consequently the complete formation of the general disease; what reason is there for supposing that the same effect would not result from this operation, at the same period, in the case of the bite of a rabid animal, if the poison enters the system by the absorbents?

After excision, ablution is again to be performed with a solution of volatile alkali in water, and when the flow of blood begins to cease, suction with the cupping-glass may be resorted to. The alternate employment of ablution and the exhausted receiver may

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* See Mr. Gillman's Prize Dissertation on the Bite of a Rabid Animal.

† See Zoonomia, vol. iv. p. 50.

be continued for some hours. Having proceeded thus far, caustic, such as the argenti nitras, or potassa fusa, may be applied to the wound, so as to produce a slough in the first instance, and afterwards a purulent discharge for some weeks. By this mode of treatment many persons have been known to escape the disease; while others who have been bitten by the same animal, and who neglected these means, have become affected.

It sometimes happens that the wounded or bitten part is so situated as not to admit of excision, or from the timidity of the patient he cannot be persuaded to submit to the operation. Under this dilemma we must be content to have recourse to a careful and persevering ablution, and afterwards to scarification and cupping, bathing the parts with warm water to promote a free flow of blood, and assist in washing away any remaining particle of the poison. With respect to the fluid to be employed at first in the ablution, a weak solution of volatile alkali, in the proportion of one part of the alkali to four of water, may be as proper as any we can use. With this solution, which is fully capable of dissolving the saliva, the wounded part should be freely washed, and injections of the same with a syringe forcibly be made into the wound. After this, water may be substituted to assist in washing away any remaining particles of the canine poison. Having washed the wound for a considerable time, it may be touched with caustic the argenti nitras, or the potassa fusa. Ligatures above and below the wounded part have been recommended during the ablutions by Dr. Percival, when they can be put on.

The bitten part must be destroyed to the bottom, by repeated applications of the caustic. To assuage the inflammation caused thereby, the wound is to be dressed for some time with poultices; and afterwards with acrid dressings and hot digestives, to remove the eschar, create a discharge, and drain the injured parts. Where there has been any delay after the accident, the wound should thus be kept open for two or three weeks, or even longer.

From some experiments made by Dr. Linke, of Jena, with the saliva taken from a mad dog after it was dead, and that had bitten other animals with a fatal effect, the external application of a strong solution of white arsenic in water to wounds besmeared with the poison, appears to have been attended with the happy effect of destroying the virus, and of preventing the disease from taking place. The remedy seems therefore worthy of further trials in wounds made by rabid animals.

Under the head of Animal Poisons it is mentioned that the external application, as well as the internal exhibition of the liquor ammoniæ, was found on many trials entirely to do away the injurious consequences arising from the bite of the cobra de capello, a snake of the most venomous kind, and productive of symptoms pretty similar to those arising from a rabid animal. The same

remedy would, therefore, seem worthy of a trial in cases of hydrophobia; but as there would be great difficulty in administering caustic volatile alkali in a state necessarily diluted with some mild bland liquor, where the increased sensibility of the fauces and the dread of liquids are so strongly felt, we might convey it into the stomach by Mr. Jukes's instrument (see Vegetable Poisons), or in the manner practised by Mr. John Hunter, and hereinafter mentioned, or we might mix the volatile alkali with crumbs of bread, and form the mass into pills, or a bolus.

In addition to these modes of prevention, it has strongly been recommended to commence, very speedily, a course of mercurial unction, which is to be continued regularly, and to be applied in a considerable quantity at once, so as to occasion some degree of salivation; to expedite which, the submuriate of mercury may be given internally night and morning, and warm bathing be used occasionally. Mercurial fumigations may also assist.

With the design of exciting a rapid salivation in hydrophobia, Dr. Darwin has suggested that one grain and a half of the hydrargyri oxymurias dissolved in half an ounce of rectified spirit may be given frequently to the patient with a prospect of advantage. From a paper by Mr. Addington, of West Bromwich, inserted in the Contributions of Medical Knowledge published by Dr. Beddoes, it appears that a similar mode is adopted by him for the cure of gonorrhœa virulenta, and that he has cured hundreds in a very short time in this manner, without the least disagreeable consequence. He directs us to proceed as follows: three grains of hydrargyri oxymurias are to be dissolved in one ounce of rectified spirit. Half of this mixture is to be taken undiluted at going to bed; it produces a copious salivation for an hour and a half, or longer, during which the patient spits about a quart. Some aperient salts are to be taken on the second day after this operation, and on the evening of that day he is to repeat the draught, and the salts on the day but one following.

Dr. Thomas Reid, in a pamphlet which bears the title of Observations on the Application of warm and cold Sea-bathing, recites a case which strongly attests the preventive effect of mercury. He makes mention, that a man, a woman, and several dogs, were bitten by a supposed mad dog, who was soon after destroyed. A fortnight after the accident, he saw them; the woman was slightly wounded in the little finger, a black scab remained on the puncture: she had great pain in the arm, shooting up to her head, particularly in the night, with disturbed and frightful dreams, and great depression of spirits. The man had been bitten in the hand also, but had not so much pain. He directed mercury for them in the manner published by Dr. James. In a few days the symptoms abated; and as the woman's mouth was sore, she desisted from using it. The pain, however, returned very soon, greatly augmented, and affected her head; she resumed the medicine, and

every symptom vanished; they both remained perfectly well. Had any return of the disease taken place, he is certain he should have been informed of it.

Dr. Reid further mentions, that the same medicine was given to dogs; but by some accident one of them was forgotten, and took none; he became raving mad the thirtieth day, and in that state he had him shot; all the other dogs remained well, except a small lap-dog, which died of the salivation. Neither the man nor woman supposed the dog to have been mad, until they began to take the medicine; the mind had therefore no influence in producing the symptoms that ensued.

These facts seem well authenticated, and strongly attest the good effects of mercury, when used at an early period. During the actual presence of the disease, its inutility has been proved in numberless instances. Dr. Mosely* has, indeed, recorded a case of recent hydrophobia, and timely discovered, which was successfully treated by exciting a rapid and plentiful salivation by means of an ounce of strong mercurial ointment rubbed into different parts of the body at four frictions within forty-eight hours.

Dr. Richard Pearson, of Birmingham, in his Treatise on Hydrophobia, offers it as his opinion, that if the disease has ever been cured by mercury, it has been in consequence of a counter-impression communicated to the whole system, and not in consequence of the salivation; for a salivation is a constant symptom of the disease, so that if it were curable by a flow of spittle, it would cure itself. This seems, however, a vague mode of reasoning.

Although medicine has hitherto proved ineffectual in most of the cases where the disease had fully established itself, still it is necessary to mention the plan which has usually been pursued on such occasions.

From certain symptoms which attend on hydrophobia, such as heat, thirst, restlessness, fever, difficulty of breathing, priapism, watchfulness, and furor; from the inflammatory appearances usually observed on dissection, and from the successful employment of venesection in some supposed cases of rabies, this remedy has been much used by many practitioners.

Where the true characteristics of the disorder were really present, it had not heretofore afforded relief; but two successful cases have lately been reported in the 167th No. of Phillips's Medical Journal, by Dr. Shoolbred, of Calcutta, in which bleeding ad deliquium animi, and repeating the operation at intervals as long as firmness of arterial action or the symptoms of hydrophobia remained, completely removed the disease. In these instances, venesection was resorted to immediately on the disorder becoming apparent. The cure in these cases, although

* See his Dissertation on Canine Madness.

attributed by Dr. Shoolbred to blood-letting alone, has by some been supposed to be owing to the combined use of mercury at the same time.

The trials which have as yet been made of the depletory practice in Europe, are too limited and defective to admit of their being received as decisive of the question as to the utility of copious bleeding at the onset of rabies. The operation should be performed as soon as the wound reassumes an inflamed appearance, or an aversion from drinking is manifested: the orifice ought to be a large one, and the bleeding be continued till actual fainting is induced, for it is not the quantity of blood lost, but the suddenness with which it is abstracted, and the fainting, that determine its efficacy.

The inflammatory diathesis, which has been supposed to exist in this disease, has of late been disputed, and particularly by Dr. Pearson. He observes, that some of the symptoms are merely accidental, others scarcely perceptible, and some, even if present, would not denote the disease to be of a nature requiring venesection. Dr. Parry says, that with respect to the proximate constitutional character of rabies, there cannot be a greater mistake than to suppose either that the fever consequent on the disease is of the inflammatory kind, or that its peculiar symptom arises from local inflammation of the fauces, the cardia, or any other part.

Under the idea that rabies is an inflammatory disease, warm bathing, and the rest of the antiphlogistic plan, have been much used in its treatment; but these means proving ineffectual, and from a fancied analogy between tetanus and rabies, some practitioners have been induced to recommend cold bathing, with a free use of wine.

Dr. Russell makes mention that wine in large quantities has been administered with success against the bites of venomous serpents; between which disorder and rabies we can readily allow some degree of affinity. With respect to cold bathing, this has been found to aggravate the disease when it has once absolutely taken place, by exciting convulsions; but before it has shown unequivocal symptoms, and is apparent, this remedy may probably be used with advantage. That cold bathing possesses a degree of preventive power against the effects of canine poison, is an opinion handed down by ancient writers, and is still entertained by many of the moderns.

From considering that the poison of a rabid animal produces an excessive increase, or morbid alteration of the natural sensibility, and that those who are bitten by a mad dog, or other animal so diseased, are in a perpetual state of restlessness, from the beginning of the attack to the end, that they can ill bear the impression of objects upon the senses, that the least noise is offensive, and that all feeling is painful, opium has been much employed; and considering that the poison produces these ef-

fects, we might be induced to suppose that it would have proved a valuable and powerful remedy. Many cases are however on record, where, although it was given to the quantity of 180 grains in the space of fourteen or fifteen hours, it failed to produce any good effect.*

Whenever opium is administered, the dose ought to be pretty considerable, and its repetition should be regulated by the effect it occasions, without much attention to the quantity. Might not the external application of it, as advised under the head of Tetanus, be worthy of a trial? Where the patient loses the power of deglutition, introducing opium into the system by means of friction, appears to be a very eligible plan. Mr. Ward, of Manchester, was, I believe, the first who suggested its being employed in hydrophobia in this manner. Indeed, as the throat appears in this disease always to be affected with spasmodic contractions, it would seem that no remedy we can employ promises better effects than the rubbing in (and particularly about the throat and chest,) opium in the form either of liniment or ointment.†

Dr. Stutz, of Suabia, very much recommends a trial of the vegetable alkali in this disease, alternately administered with opium, together with its external application in a warm bath.

Besides opium, other antispasmodics, such as musk, &c., have been employed in the treatment of hydrophobia, but without much advantage. The best plan will be to unite their powers, by giving them combined as below.‡

As ipecacuanha in small doses proves serviceable in some spasmodic diseases, it perhaps might be useful to give it in this. It should not, however, be administered so as to provoke vomiting, but only in such doses as will be sufficient to promote a copious perspiration, by exciting a slight degree of nausea. It is probable hat the pulvis ipecacuanhæ compositus (in which there is a portion of opium) ought to be preferred to the simple powder, as being usually attended with a more certain diaphoretic effect.

It has been recommended to make a trial of the oil of turpen-

* See Medical Record and Researches, art. viii. p. 117.

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† 1. ℞ Tinct. Opii, f. ℥j.
Spirit. Camphoræ, f. ℥ss.
Liquor. Ammoniæ, f. ℥ij. M.
ft. Linimentum.
Vel,
2. ℞ Adipis Præparat. ℥i.
Opii in Pulv. subtilis. trit. ℥iij. M.
ft. Unguentum.

‡ 3. ℞ Moschi, gr. xij.
Camphoræ, gr. v.
Opii, gr. iij.—x.
Bals. Peruv. q. s. M.
ft. Bolus, 4tis horis sumendus.

† 1. Take Tincture of Opium, one ounce.
Camphorated Spirit, half an ounce.
Solution of Ammonia, two drachms.
Mix them, and use them as an embrocation.
Or,
2. Take Prepared Lard, one ounce.
Opium, in fine powder, three drachms.
Mix them into an ointment.

‡ 3. Take Musk, twelve grains.
Camphor, five grains.
Opium, three grains to ten.
Balsam of Peru, a sufficiency to form a bolus, which may be taken every four hours.

tine in the form of clyster, during the convulsive stage of the disease, from its efficacy in some other spasmodic affections, but more particularly hysteria. The hint seems worthy of attention.

It is asserted that some cures have been performed by a liberal use of vinegar. We have likewise been assured, that anointing the body freely with sweet oil, and pouring repeated draughts of it forcibly down the throat, has lately been discovered to be a successful remedy in hydrophobia. The dread of fluids is said to diminish in proportion to the quantity of oil which is swallowed. A method of preventing the plague, somewhat similar to this, has been noticed under the head of that disease.

Among the medicines celebrated for their virtues in hydrophobia are to be enumerated the Ormskirk powder, the Tonquin remedy, and the Carnatic pill. The former of these seems perfectly inert, and on a careful analysis was found to consist of about half an ounce of prepared chalk, ten grains of alum, three drachms of Armenian bole, one drachm of powdered elecampane root, and a few drops of the oil of aniseeds. The principal ingredient in the latter is arsenic. This mineral is much employed by the Hindoo physicians as an antidote to hydrophobia. It enters into the composition of the East India snake-pill, a medicine communicated to the presidency of Madras by a native of Tanjore, and which, we are told by Dr. Simmons, (one of the Company's surgeons,) he has administered with apparent success to persons bitten by mad dogs. In Dr. Hamilton's Treatise on Hydrophobia, it is indeed much recommended to try the effects of arsenic in this disease. As strong epileptic paroxysms have been stopped by administering the arsenical solution, possibly it might have a good effect in rabies. A combination of arsenic and opium has been proposed by Dr. Blane* as a prophylactic for the bite of a mad dog. The oxyd of zinc, and the cuprum ammoniatum, are other mineral preparations which have been named as well adapted to the disease. The Tonquin medicine consists of twenty-four grains of native cinnabar with the same quantity of factitious, made into a powder, with sixteen grains of musk. It is directed to be taken in a tea-cupful of arrack or brandy, and is said to secure the patient for thirty days, at the expiration of which it is to be repeated; but if he has any symptoms of the disease, it must be repeated in three hours. The first dose is to be taken as soon after the bite as possible.

The alisma plantago, reduced to powder, and given to the person bitten, is reported to be much used among the Russians with a happy effect in hydrophobia. It may be given in doses from twenty to twenty-four grains of the powdered root, at intervals of two hours, but it ought never to be relied on to the exclusion of the local treatment, nor indeed should any other medicine.

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* See Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge.

Notwithstanding the various nostrums that have in all ages and different countries been extolled as antidotes to the poison of rabid animals, we may rest assured that the only remedy on which we can place a confidence is excision or cauterization, but particularly the former. Even in wounds completely healed, perhaps it would be advisable to adopt one or other of these, and thereby expose the part within reach of the animal's teeth. If the remedy is resorted to before lancinating pains and uneasiness begin to show themselves about the cicatrix, we may be more likely to succeed by our preventive means, as such symptoms indicate the passage of the virus through the absorbents, or along the course of the nerves.

Dr. Pearson is of opinion, that the exciting some degree of fever and inflammation may have a salutary effect in canine madness. He observes, that there is no instance of a person having recovered from an animal poison introduced into the system, without more or less inflammatory action. The poison which produces the plague is often most fatal when it is accompanied with the least degree of fever; and swelling and inflammation of the bitten part, together with increased heat over the whole body, are the usual forerunners of recovery in cases of viper bites.

On these grounds he is induced to presume that wine, ardent spirits, and aromatics, may have a beneficial effect in rabies, provided the aversion to liquids is not so strong as to render the exhibition of wine impracticable. He says, that perhaps the nitric or other mineral acids, or vinegar (as mentioned by Dr. Ferriar,) might be advantageously mixed with the wine. Besides giving wine and vinegar by the mouth, he tells us they should likewise be injected up the rectum. Those things are to be administered on the first appearance of the symptoms characteristic of rabies; for as the disease advances, neither wine nor any other liquid can be swallowed in quantities sufficient to produce a powerful effect; and there is sometimes an equal impediment to the administration of clysters.

Even in this state of things, he mentions, we are not without resource. Some of the concrete acids, such as the essential salt of tartar, the essential salt of lemons, or even the acidum benzoicum, may be given joined with about half as much powdered capsicum, or other strong aromatic, and divided into small portions to be enveloped in wafer-paper, and formed into boluses. Not less than 20 or 30 grains of the concrete acids, nor less than 8 or 10 grains of the capsicum, should be given for a dose. Dr. Pearson further observes, that while these things are administered internally, topical applications are not to be neglected. Where the bite is in a part that will admit of it, a ligature, as proposed by Dr. Percival, should be applied above the cicatrized wound. This will prevent farther absorption. At the same time the bitten part may be opened or destroyed by the application of lunar caustic, or concentrated mineral acids. After the corrosion of the cicatrized

wound by the means just mentioned, the ligature which had been passed round the limb should be removed.

Such is the plan proposed by Dr. Pearson, which being novel, it seemed right to notice. Whether stimulants are really useful and powerful remedies in the treatment of hydrophobia or not, can only be determined on trial, and not on any previous view of the nature of the disease which theory may suggest.

It now remains only to observe, that during the furious stage of the disease the greatest care must be taken that the patient is so confined by means of a strait waistcoat, as to be rendered incapable of doing any injury either to his attendants or himself. As long as he can swallow, his strength is to be supported by things that are light and nutritive, and when deprived of this power, clysters of animal broths must be injected. To assuage his thirst, wine and water may be poured down his throat from the spout of a tea-pot; but if his dread at liquids and act of deglutition are insurmountable, a sponge dipt in warm vinegar may be kept constantly to his mouth and nostrils.

If great costiveness prevails at any time in the course of the disease, it should be removed by a laxative clyster. If this fails in procuring the desired effect, the purgative pills advised below* may be given.

In cases of hydrophobia, fluids might be conveyed into the stomach, and the patient's strength supported, by means of Mr. Jukes's apparatus, consisting of a long tube of elastic gum with a large syringe attached thereto (see Vegetable Poisons), or in the manner practised by the late Mr. John Hunter in a patient who was afflicted with a paralysis of the œsophagus, and consequently unable to swallow any nutriment.† The instrument made use of was a fresh eel-skin, of rather a small size, drawn over a probang, and tied up at the end where it covered the sponge, and tied again close to the sponge where fastened to the whalebone, a small longitudinal slit being made into it just above this upper ligature. To the other end of the eel-skin was fixed a bladder, and a wooden pipe, similar to what is used in giving a clyster, only the pipe being large enough to let the end of the probang pass into the bladder without filling up the passage. The probang, thus covered, was introduced into the stomach, and both food and medicines being put into the bladder were squeezed down through the eel-skin.

As cases however of this kind may occur where eel-skins cannot be procured, a portion of the gut of any small animal will make a

† See Transactions of a Society for the Improvement of Medical Knowledge, vol. i.

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* 3. ℞ Extract. Colocynth. C. ℈j.	* 3. Take Compound Extract of Colocynth, one scruple.
Hydrargyri Submuriat. gr. v.	Submuriate of Mercury, five grains.
Ol. Carui, ♏ iij. M.	Oil of Caraway, five drops.
ft. Massa, in pilulas vj. dividenda.	Mix them, and divide the mass into 6 pills.

good substitute. By this mode, whatever fluids are administered would not come in contact with the irritable parts of the gullet.

COLICA, OR COLIC.

COLIC is a painful distension of the whole of the lower region of the belly, with a twisting round the navel in particular, often accompanied with vomiting, costiveness, and a spasmodic contraction of the muscles of the abdomen.

The disease is produced by various causes, such as crude and acescent food, flatus, a redundance of acrid bile, long-continued costiveness, hardened fæces, certain metallic poisons, derangement of the primæ viæ, metastasis of gout or rheumatism, hysteria, the application of cold and moisture, worms in the intestinal tube, and the having swallowed poisonous substances. It has commonly been considered as being of different species, and has been variously denominated, according to the cause which has given rise to it, as the bilious, the flatulent, and the hysteric: but in all of them the proximate cause seems to be the same, viz. a spasmodic constriction of some part of the intestines.

In the bilious colic there is loss of appetite, bitter taste in the mouth, thirst, febrile heat, costiveness, and a vomiting of bilious matter, attended with an acute pain all round the region of the navel; and as the disease advances, the former becomes more frequent, and the latter more severe and lasting.

In the flatulent colic there is great costiveness, attended with pain, soreness and griping of the bowels, a rumbling noise, distention of the stomach, an inclination to throw up, and coldness of the extremities.

In the hysteric colic there is nausea and sickness at the stomach, accompanied with severe spasms, costiveness, and dejection of spirits.

The disease, when rising to a violent height, and attended with a stercoraceous vomiting, obstinate costiveness, and an evacuation of fæces by the mouth, constitutes what is called the iliac passion. In this, as well as in intus-susceptio, the peristaltic motion is inverted, and a high degree of inflammation is the consequence.

The colic is to be distinguished from enteritis by the spasmodic contraction of the abdominal muscles, by the absence or trifling degree of fever, by the state of the pulse, which is frequent but full, and by the diminution of the pain upon the pressure of the abdomen: whereas in enteritis, there are no spasms, but a considerable degree of fever, the pulse is quick and small, and the abdomen extremely tender to the touch.

When the pain remits, or shifts its situation, not being obstinately confined to one place, and when the patient experiences considerable ease after a discharge either of wind or fæces, and stools are obtained, we may have reason to expect a favourable

termination to the disease ; but the sudden cessation of pain, with the costiveness remaining obstinate, cold sweats breaking out, a weak tremulous pulse, frequent syncope, and the ensuing of hiccups, denote supervening inflammation terminating in a gangrene.

When the disease proves mortal, the usual appearances to be observed on dissection are, inflammation on the surface of the intestines, distension and irregular contraction of some particular part of the tube, or a passing of one portion of it within another to a considerable extent, the part received within the other being in a contracted state, or probably gangrenous.

In all cases of colic, where the patient is young and vigorous, and the symptoms proceed with such violence as to endanger the ensuing of an inflammation of the intestines, it will be advisable to take away some blood, being regulated as to the quantity by the state of the pulse and the appearance of what is drawn off. In repeating the operation we are to be guided by the severity of the attack, the continuance of the constriction on the intestines, the habit of the patient, and the state of the pulse ; for although drawing blood may sometimes be necessary in the colic, there is, however, no necessity for carrying it to the extent we would in enteritis.

In the bilious colic, if there is great irritation at the stomach with frequent vomiting, we may direct a saline draught to be taken every two or three hours in the act of effervescence, with an addition of about five-and-twenty drops of tinctura opii ; but if only a nausea prevails, the patient may be made to drink plentifully of chamomile-tea. Externally we may apply flannel cloths wrung out in a warm decoction of emollient herbs, or a bladder filled with hot water, interposing between the paroxysms frictions with anodyne liniment.

When the nausea and vomiting have ceased, he should take some active purgative* to carry off the offending matter, the operation of which may be assisted by a free use of diluent liquors, such as thin gruel and animal broths. Should the purge be rejected by the mouth, or not operate quickly, we must then attempt to dislodge the contents of the intestines by clysters, making use of mild laxatives at first, and afterwards resorting to those which are more powerful, if necessary ; and these are to be repeated until a sufficient effect is produced.

In the flatulent colic we may begin the cure by giving a wineglass of some aromatic cordial combined with an opiate.† If re-

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* 1. ℞ Pulv. Jalapæ, ℥ss.
Hydrargyr. Submur. gr. v.
Syr. Rhamni, q. s. M.
Fiant pilulæ v. pro dos.

† 2. ℞ Aq. Menth. Pip. f. ℥j.
Spirit. Carui, f. ℥ss.

* 1. Take Powder of Jalap, half a drachm.
Submuriate of Mercury, five grains.
Syrup of Buckthorn, a sufficiency.
Form the mass into five pills, to be taken for a dose.

† 2. Take Peppermint Water, one ounce.
Spirit of Caraway, half an ounce.

lief is not soon obtained, a carminative clyster* may be injected every three or four hours, and warm fomentations, with an addition of rectified spirit, be applied over the whole region of the belly. Should clysters not procure a copious evacuation of fæces and wind, some stomachic purgative† may be administered by the mouth. Ammonia, joined with carminatives, will be very proper in the flatulent colic.

If the disease continues to increase with violence notwithstanding these means, so as to threaten the approach of an inflammation in the bowels, we must then resort immediately to bleeding, the warm bath, and blistering over the part more particularly affected. On apprehending a similar consequence in the bilious colic, we may adopt the same means.—See Enteritis.

In the hysteric colic it will seldom be necessary to make use of evacuation; but should obstinate costiveness prevail, it will be

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Tinct. Lav. C. f. ʒj.

—— Opii, ♏ xx. M.
ft. Haustus.

Vel,

3. ℞ Tinct. Cardam. C. f. ʒiij.

—— Opii, ♏ xxv.
Aq. Menth. Pip. f. ʒiss. M.
ft. Haustus.

* 4. ℞ Sem. Anis. Contus.
Flor. Anthemidis, āā ʒss.

Coque ex Aq. Fontan. Ojss. ad ʒxj. et colaturæ adde

Sodæ Sulphat. ʒvj.
Ol. Ricini, f. ʒj. M.
ft. Enema.

Vel,

5. ℞ Ol. Terebinth. f. ʒss.
Vitel. Ovi, q. s.
Misceantur in mortario marmoreo, dein adde gradatim
Decoct. Avenæ, f. ʒxij.
ft. Enema.

† 6. ℞ Tinct. Sennæ C. f. ʒj.

—— Jalapæ, f. ʒj. M.
ft. Haustus.

Vel,

7. ℞ Infus. Sennæ Comp. f. ʒv.

Tinct. ejusd. C. f. ʒvj.

Magnes. Sulphat. ʒj.
Syrup. Zingib. f. ʒss. M.
ft. Mistura, cujus capiat æger cochlearia tria magna omni bihoria donec alvus purgetur.

Compound Tincture of Lavender, one drachm.
Tincture of Opium, thirty drops.
Make them into a draught.

Or,

3. Take Compound Tincture of Cardamoms, three drachms.
Tincture of Opium, forty drops.
Peppermint Water, one ounce and a half.
Mix them for a draught.

* 4. Take Aniseed, bruised,
Chamomile Flowers, of each half an ounce.
Pure Water, one pint and a half.
Boil them slowly until the water is reduced to eleven ounces, and to the strained liquor add
Sulphate of Soda, six drachms.
Castor Oil, one ounce.
Mix them for a clyster.

Or,

5. Take Oil of Turpentine, half an ounce.
Yolk of Egg, a sufficiency.
Mix them well together in a marble mortar, then slowly add
Thin Water Gruel, 12 ounces.
Mix them for a clyster.

† 6. Take Compound Tincture of Senna, one ounce.
Tincture of Jalap, one drachm.
Mix them for a dose.

Or,

7. Take Compound Infusion of Senna, five ounces.
Compound Tincture of the same, six drachms.
Sulphate of Magnesia, one ounce.
Syrup of Ginger, half an ounce.
Of this stomachic purgative let the patient take three table-spoonsful every two hours until the bowels are well moved.

proper to give some gentle laxative,* administering at the same time every four or six hours the clyster of turpentine recommended in the flatulent colic, as I have known it in many instances to have been attended with much benefit, and this almost immediately. If a vomiting attends, the stomach may be cleansed by drinking one or two cupsful of chamomile-tea, after which the patient may be ordered some antispasmodic medicine.†

When a colic of any kind proceeds with great violence, and terminates in an inversion of the peristaltic motion, or iliac passion (as it is usually called,) notwithstanding the means which have been recommended have all been employed, it then becomes advisable to have recourse to the injection of tobacco clysters which herb may be used either in the form of infusion‡ or that of smoke. Where even these fail, it has been customary to attempt a mechanical dilatation of the intestines, by giving a large quantity of quicksilver by the mouth. The practice seems, however, attended with a considerable degree of danger; for should the inversion of the peristaltic motion have arisen in consequence of intus-susceptio, which is sometimes the case, the complaint, instead of being relieved by the remedy, would certainly be increased by it.

A surer and much safer method of employing mechanical dilatation is by injecting a large quantity of tepid water by a proper-sized syringe, which will throw it into the rectum in a continued stream, and with some force, the patient drinking copiously at the same time. Some persons have borne two gallons to be injected in this way, and the cases were attended with the desired success. In those instances where there is an accumulation of hardened fæces in the colon, these large injections seem to be a powerful remedy, as they serve the two intentions of dilating the passage and of softening the fæces.

Obstinate constipations, arising from an accumulation of indurated fæces in the rectum, and attended with severe colic pains

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* 8. ℞ Pulv. Rhei, ℈j.
Spirit. Anisi, f. ʒss.
Aq. Cinnam. f. ʒj.
Tinct. Jalapæ, f. ʒj. M.
ft. Haustus, statim sumendus.

† 9. ℞ Aq. Anethi, f. ʒivss.
Spirit. Æther. Sulphur. f. ʒj.
—— Ammon. Fœtid. f. ʒss.
Tinct. Opii, ♏xxxiij.
—— Castor. f. ʒss. M.
ft. Mistura, cujus sumat cochl. magna ij. tertiis vel quartis horis.

‡ 10. ℞ Fol. Tabaci, ʒss.—℈ij.
Aquæ Bullient. f. ʒxij.
Post semihoram col. pro enemate.

* 8. Take Powdered Rhubarb, one scruple.
Spirit of Aniseed, half an ounce.
Cinnamon Water, one ounce.
Tincture of Jalap, one drachm.
Make them into a draught, which is to be taken immediately.

† 9. Take Dill Water, four ounces and a half.
Spirit of Sulphuric Æther, one drachm.
Fetid Spirit of Ammonia, half a drachm.
Tincture of Opium, fifty drops.
———— Castor, half an ounce.
Of this mixture two large spoonsful may be taken every three or four hours.

‡ 10. Take Tobacco, half a drachm to two scruples.
Boiling Water, twelve ounces.
After infusing for half an hour, strain off the liquor, and administer the clyster.

which resisted the usual means of relief, have been removed by introducing the finger, or scoop used in lithotomy, in ano, and then breaking and loosening the scybala. Two cases of this nature are recorded in the Edinburgh Medical Commentaries for the year 1795, which undoubtedly suggest an important caution; to advert to the cause above pointed out, in cases of obstinate costiveness and colic, where the usual means of aperient medicines and clysters have a reasonable trial, without the desired effect.

Throwing cold water on the extremities, or applying pounded ice, snow, or towels wetted with a solution of ammonia muriata and nitre in cold water to the region of the belly, have been found, in some cases of obstinate constipation, to have been attended with a good effect, where all other remedies have failed.

It is well known, that many people have a skin of so irritable a texture that if exposed to cold it will bring on a purging. In all constitutions cold increases the peristaltic motion of the intestines; and again, if cold is applied to the external surface of the body, even although the bladder is not full, there will be a strong inclination to empty it.

Those who are subject to attacks of the colic should cautiously abstain from all kinds of crude, flatulent food, and from fermented liquors: they should also avoid, as much as possible, any exposure to wet and moisture, taking due care to obviate costiveness by a timely use of some gentle laxative, and to wear flannel next to the skin.

COLICA PICTONUM, OR THE DRY BELLY-ACH.

THE characteristics of this disease are, obstinate costiveness, with a vomiting of acrid or porraceous bile, pains about the region of the navel, shooting from thence to each side with excessive violence, strong convulsive spasms in the intestines and abdominal muscles, with a tendency to a paralysis of the extremities.

It is occasioned by long-continued costiveness; by an accumulation of acrid bile; by cold applied either to the extremities or to the belly itself; by a free use of unripe fruits; by great irregularity in the mode of living; by acrid food or drink, such as sour wines or cider; and by the inhalation of vapours arising from a decomposition of lead, or frequently handling some of its chemical preparations; hence painters and glaziers are frequently attacked by it. From the disease occurring frequently in Devonshire and other cider counties, it has generally been supposed to arise from an impregnation of lead received into the stomach; and it seems now to be perfectly understood that the malic acid of the apple takes up in solution a portion of the lead of the vats employed in manufacturing the cider, which soon acts on the stomach of those who drink this liquor abundantly, and produces the disease in question.

It is true, however, that the effect of some metals in destroying or preventing the acidity of cider or wine, often induces dealers in these articles to employ some of the preparations of lead for this purpose.

A dreadful disease of a similar nature with the colic under investigation, and caused by the destructive fumes of melted lead, is known to be very prevalent among those who are employed in smelting or preparing this metal, and is said to attack even those who live near the furnaces. It passes in many places under the name of the mill-reek.

Colica pictonum comes on gradually with a pain at the pit of the stomach, extending downwards to the intestines, particularly round the navel, accompanied by eructations, slight sickness at the stomach, thirst, anxiety, obstinate costiveness, a frequent but ineffectual desire to evacuate the contents of the bowels, and a quick contracted pulse, but seldom exceeding one hundred in a minute. After a short time the pains increase considerably in violence, the whole region of the belly is highly painful to the touch, the muscles of the abdomen are contracted into hard irregular knots or lumps; the intestines themselves exhibit symptoms of violent spasm, insomuch that a clyster can hardly be injected from the powerful contraction of the sphincter ani; and there is constant restlessness, with a frequent vomiting of an acrid or porraceous matter, but more particularly after taking either food or medicine.

Upon a further increase of the symptoms, or their not being quickly alleviated, the spasms become more frequent as well as violent, the costiveness proves invincible, and an inflammation of the intestines ensues, which soon destroys the patient by terminating in gangrene. In an advanced state of the disease it is no uncommon occurrence for dysuria to take place in a very high degree.

Due attention will be necessary in distinguishing accurately between enteritis and colica pictonum. The symptoms which characterize the latter, and distinguish it from the former, are these: the pain at first is rather more in the pit of the stomach; it afterwards fixes itself at the umbilicus, and thence darts in all directions over the abdominal viscera, accompanied by such a retraction of the abdominal muscles, as to oblige the patient to lean forward, as the only posture in which he feels at all easy, whilst at the same time the circulation does not appear to be affected. In enteritis the abdomen is tumid, hard, and painful, but the pain seems concentrated, and does not diverge as in those spasmodic twitchings or dartings observed in colica pictonum: moreover the pulse is quick, although usually small. In colica pictonum, besides the rigidity and retraction of the muscles, the belly seems pressed down towards the spine with a force proportional to the degree of spasm. In enteritis there is little or no spasm; but in the other disease, there is soon perceived a dispo-

sition to paralysis in the extremities, and often a contraction of the joints, which never take place in enteritis.

The palsied and dropping hand, and slightly contracted fingers, unaccompanied by spasm in the upper extremities, or by any affection of the lower, supervene with remarkable uniformity in the colic to which painters and glaziers are liable from constantly handling white lead.

Colica pictonum is always attended with some degree of danger, but which is ever in proportion to the violence of the symptoms and the duration of the disease. Even when it does not prove fatal, it is too apt to terminate in palsy, and to leave behind it contractions of the hands and feet, with an inability in their muscles to perform their office; and in this miserable state of existence the patient lingers out many wretched years. Such consequences are very frequent in warm climates, and many fell under my immediate care and observation during my practice in the West Indies. When this colic is induced by lead, it is more obstinate and longer protracted than when brought on by other causes.

Dissections of this disease usually show the same morbid appearances as in common colic, only in a much higher degree.

In all complaints of the intestines partaking of the nature of colic, it will be proper to make inquiries respecting the patient's habits of life; and if these be discovered to subject him to the influence of lead, the identity of the disease is proved beyond the possibility of doubt.

The indications of cure in the colica pictonum seem to be,

1st, To guard against the consequences of inflammation, where the attack is severe, and the patient young and plethoric.

2dly, To take off the spasm, by means of various antispasmodic powers; and,

3dly, To excite the action of the intestines by purgatives and other means.

To answer the first of these intentions, if the symptoms are so violent as to endanger the taking place of an inflammation of the intestines, it will be advisable to draw off a quantity of blood proportionate to the age and habit of the patient, and that at an early period of the complaint.—(See Enteritis.) I am sensible that bleeding has been disapproved of by some practitioners in this disease, on the supposition of its being purely spasmodic; but as inflammation, and its fatal termination in gangrene, have occasionally ensued, when the disease has run on for many days, it seems to be an advisable operation in those cases where the symptoms run high at first. In debilitated habits, elderly people, and mild attacks, its use may with propriety be dispensed with.

The step advised being adopted, when judged necessary, we should next resort to antispasmodics for the purpose of answering the second intention, viz. that of removing the spasms. The remedies in general use for this purpose are, fomentations applied

to the abdomen by means of flannel cloths wrung out in a warm decoction of poppy-heads with an addition of rectified spirit; frequent immersion in a warm bath; or taking the patient out of bed, making him walk on a cold damp floor barefooted, throwing at the same time cold water on his feet, legs, and thighs; and the internal use of opium in considerable doses.

Two obstinate cases of colica pictonum, arising from exposures to cold, very lately came under my care, which resisted fomentations, the warm bath, anodyne and tobacco clysters, the internal use of opium and cathartics, and which at last were readily and quickly removed by placing the patients in a large tub, and throwing a pail of cold water over the abdomen and thighs. The operation was not required a second time, for copious evacuations soon took place, after which the spasmodic affection was prevented from returning by small doses of opium repeated from time to time.

The benefit obtained by dashing cold water upon the abdomen and extremities in this disease and ilius, seems to be owing to the sympathy which exists between them and the intestines; the fibres of the latter become relaxed, while the sudden contraction of the vessels on the skin, in consequence of the application of cold, determines the flow of blood inwardly, and occasions a copious secretion from the intestinal surface, whereby a free expulsion of their contents quickly ensues.

Where these means fail to produce the desired effect, it is customary to have recourse to anodyne* or tobacco clysters, either in the form of infusion or smoke. Tobacco administered in the form of infusion, as advised in colic, where an inversion of the peristaltic motion takes place, is equally efficacious, and less indeterminate as to the dose, than when employed by way of smoke. The remedy acts by exciting nausea and syncope, during which the spasmodic affection is relieved, and the constriction on the intestine, if any exists, often removed. It sometimes, however, depresses the living power in the system to so alarming a degree, as to intimidate the bystanders, and to make the patient very reluctantly submit to any repetition of its use. Great caution is therefore necessary in employing it.

The application of a large blister to the abdomen may prove sometimes useful.

In those cases where, from the great irritability of the stomach, we cannot get opium† to sit long enough on it, so as to produce the desired effect, it probably might be attended with advantage to convey it into the system by means of friction, as in the forms

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* 1. ℞ Infus. Sennæ, f. ℥x.
Opii, gr. iij. Solv. pro Enemate.

† 2. ℞ Pilul. Sapon. cum Opio, gr. v. pro dos.

* 1. Take Infusion of Senna, ten ounces.
Opium in solution, three grains.
Mix them for a clyster.

† 2. Take Soap Pill with Opium, five grains for a dose.

advised below,* repeating it at short intervals of about two hours, until some sensible effect is observed.

This mode of introducing opium into the system has been adopted by many practitioners in various diseases, particularly by Mr. Ward, surgeon to the Manchester Infirmary. He informs us,† that from frequent trials, he thinks himself warranted in drawing the following inferences: 1st, That opium, when diligently applied externally, so as to be absorbed by the lymphatics, has powerful effects in allaying irritation, removing spasm, and procuring sleep. 2dly, That it is capable of producing these happy effects where the exhibition of it internally had not the same salutary operation. 3dly, That this mode of introducing it into the system may be resorted to with advantage when it cannot be given internally, or when it will not sit on the stomach.

As soon as the spasms suffer some little relaxation, and the stomach is somewhat composed, we should advise a mild cathartic‡ to be taken, as the oleum ricini, tinctura sennæ composita, or a solution of some purgative salt; assisting the operation of the medicine by administering a laxative clyster‖ every three or four hours, should the desired effect not be produced speedily. If stools are not procured by these, we must have recourse to more active purgatives.

In colica pictonum, where there is great irritability of the stomach with frequent vomiting, we should give a preference to the hydrargyri submurias over most other purgatives, as it may

† See Medical and Physical Journal for July 1799, page 447.

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* ℥ ℞ Opii Pulv. Subtilis. ʒss.—ʒi.
Camphoræ, gr. xv.
Adipis Præparat. ʒi. M.
ft. Unguentum.
Vel,
4. ℞ Spirit. Camphoræ, f. ℥i.
Tinct. Opii, f. ʒss. M.
ft. Linimentum.
‡ 5. ℞ Ol. Ricini, f. ʒss.
Mucilag. Gum. Acaciæ, q. s. Misceantur in mortario, et adde
Aq. Menth. Pip. f. ʒj.
Tinct. Opii, ℥ xvij. M.
ft. Haustus, sextis horis sumendus.
‖ 6. ℞ Extract. Colocynth. ʒss.
Infus. Sennæ, f. ʒx.
Sodæ Sulphat. ʒss.
Ol. Ricini, f. ʒi. M.
ft. Enema.

* 3. Take Opium in fine Powder, half a drachm to one drachm.
Camphor, rubbed down, fifteen grains.
Prepared Lard, one ounce.
Mix them.
Or,
4. Take Camphorated Spirit, one ounce.
Tincture of Opium, half an ounce.
Mix them and use them as a liniment.
‡ 5. Take Castor Oil, half an ounce.
Mucilage of Gum Acacia, a sufficiency; mix them in a mortar, then add gradually
Peppermint Water, one ounce.
Tincture of Opium, twenty-five drops.
Mix them and let this draught be taken every six hours.
‖ 6. Dissolve Extract of Colocynth, half a drachm, in
Infusion of Senna, ten ounces, and add
Sulphate of Soda, half an ounce.
Castor Oil, one ounce.
Mix them for a clyster.

be administered in the form of pills,* which will be less likely to be rejected than any medicine in a liquid form. According to the severity of the pains, we are to continue the use of opium, either joined with cathartics or given separately : but perhaps the former might be preferable.

The oil extracted from the seeds of the croton tiglium is an active purgative, and would seem to be of particular use, where, from great irritability of the stomach being present, medicines in any quantity or bulk cannot be retained on it. The proper dose is two drops on a bit of sugar, or with a little crumb of bread formed into a pill.

When our endeavours to put a stop to the vomiting and spasms, as likewise to procure stools, are crowned with success, we are then carefully to guard against a return of the disease by keeping the body regular and open with some aperient medicine, giving small doses of opium from time to time, and by cautioning the patient against exposing himself to cold or any other occasional cause. The tone of the primæ viæ is afterwards to be restored by a use of tonics and stomachic bitters, as recommended for the cure of Dyspepsia.

Should a tingling sensation be felt down the spine, together with a feebleness and numbness in the extremities, the parts affected may be rubbed with some kind of stimulating application, as advised under the head of Palsy ; besides which, the patient should frequently make use of warm bathing, always giving a preference to natural baths where they can be resorted to. In addition to these remedies, a long-continued use of cinchona bark, bitters, chalybeates, and friction with a flesh brush, assisted by electricity, may be employed. Flannel should be worn next to the skin.

The paralysis, or loss of power in particular limbs, which is one of the serious consequences resulting from the poison of lead, is found to be peculiarly relieved by the use of the Bath waters when applied externally, either generally or upon the part affected.

The mode in which these waters are prescribed in this complaint, is by bathing and pumping ; the former three times in the week, the latter on the diseased limbs and spine, to the amount of four or five hundred strokes every other day. When there is considerable debility and want of due tone in the stomach, the waters may be administered internally with very great ad-

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* 7. ℞ Hydrargyri Submuriat. gr. v.
Extract Colocynth. C. gr. vj.
Opii, gr. j.
Ol. Carui, ℥ iij. Contunde simul, et fiant pilulæ iij. quarta quaque hora sumendæ, donec alvus probe respondeat.

* 7. Take Submuriate of Mercury, five grains.
Extract of Colocynth, six grains.
Opium, one grain.
Oil of Caraway, five drops.
Mix them well, then divide them into three pills, repeating the dose every four hours, until the bowels act freely.

vantage.* The waters also of Bareges and Aix-la-Chapelle are said to be highly useful in paralysis arising from the poison of lead.

In an ingenious pamphlet published by Dr. Clutterbuck,† several cases are given of the successful use of mercury in the colic and paralysis of the wrists, produced by lead; and therefore, when the disease is clearly ascertained to have arisen from this mineral, it may be advisable to adopt the plan which he pursued. In some of these patients, a drachm of strong mercurial ointment was rubbed morning and night on the wrists, till the mouth became sore. In others, one grain of hydrargyri submurias was given daily with oleum ricini; and in others a quarter of a grain of the hydrargyri oxymurias was given three times a day with great apparent advantage.

In the colic of painters, mercury with opium, followed by sulphate of magnesia and other laxatives, appears to be the best mode of cure. Sulphur, or sulphureous waters, had best be avoided, as being likely to prove deleterious.

Where paralysis of the wrists has been the consequence of colica pictonum, and this has arisen from exposure of saturnine emanations, although the cure has always been protracted and doubtful, the nitrate of silver has, however, been found a powerful agent in overcoming both the cause of the spasmodic contractions and the consequent paralysis, and possibly the complaint may now be regarded as under the control of art.‡

The remedy may be administered in doses of from one to three grains three or four times a day, preceded by a dose of castor oil. From the activity of its operation on the bowels, it may be necessary to combine it occasionally with opium, and to give it in solution instead of a solid form, as intestinal hæmorrhage has been known to result from its exhibition in an undiluted state.

In the treatment of that species of palsy which is produced by the poison of lead, and which is apt to ensue after severe attacks of colica pictonum when excited by this mineral, Dr. Pemberton is of opinion,‖ that besides the remedies appropriate to the removal of the original disease, some assistance of a mechanical nature might be applied likewise for the purpose of relieving the topical paralysis, by placing the muscles in such a state as that they might be again enabled to resume their lost action; and for this purpose he recommends the use of an ingenious mechanical contrivance, which the reader will find fully described under the head of Palsy.

It has been mentioned before, that the effect of some metals in destroying or preventing the acidity of cider or wine, often

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* See Treatise on the Bath Waters, by Mr. J. H. Spry.
† See his Treatise on the Poison of Lead.
‡ See London Medical Transactions of the Royal College of Physicians, vol. v. art. 4th.
‖ See his Treatise on the Diseases of the Abdominal Viscera, p. 155.

induces dealers in these articles to employ some of the preparations of lead for this purpose. The method most in use for discovering the injurious mixture of litharge with wine, is by pouring into it some sulphuric acid, which causes a white precipitate to fall to the bottom of the vessel. This is not, however, so accurate a test of lead as water charged with sulphuretted hydrogen, which is thus prepared: Put into a phial a paste of sulphur and iron filings, pour on it a little sulphuric acid, and pass the gas produced into a flask of water by a bent tube.

This water, poured on wine mixed with litharge, renders it black and flaky, and produces an abundant precipitate, which soon falls to the bottom of the vessel.

CHOLERA MORBUS, OR VOMITING AND PURGING.

FREQUENT and violent discharges of bilious matter, both upwards and downwards, with painful gripings, constitute the disease called cholera morbus.

In warm climates it is met with at all seasons of the year, and its occurrences are very frequent; but in England and other cold climates it is apt to be most prevalent in the autumn, when there is excessive heat, or there are sudden transitions from heat to cold; and the violence of the disease has usually been observed to be greater in proportion to the intenseness of heat. These circumstances naturally induce us to presume that cholera morbus is the effect of a warm atmosphere producing some change in the state of the bile; which change may consist either in the matter of the bile being rendered more acrid, or its being secreted in a preternatural quantity. In some instances the disease has been observed to proceed from obstructed perspiration, and likewise from food which has passed readily into the acetous fermentation, from unripe fruit, and acrid ingesta: but these causes probably would not give rise to it without the predisposition acquired by preceding great heat, succeeded by sudden transitions to cold, particularly in the evenings.

That the functions of the liver are greatly deranged in cholera morbus is very certain; but that the symptoms are caused wholly by the action of bile upon the mucous surfaces, is now, I believe, acknowledged to be an erroneous opinion. When it is considered that there is a cold stage antecedent to that of action and excitement, and that the vomiting and purging exist for some hours before the bile appears in the matter ejected, it must be evident that there is a highly excited state of the mucous surfaces, wholly independent of the biliary secretion. The causes of cholera morbus, as well as the symptoms and the appearances after death, evince clearly that the disordered action affects both the intestinal mucous surfaces and the liver.

The disease usually comes on with nausea, soreness, pain, distension, and flatulency in the stomach, and acute griping pains in the bowels, succeeded after a time by a severe and frequent vomiting and purging of bilious matter, heat, thirst, a hurried respiration, and a frequent, but weak and fluttering pulse.

When the disease is not violent, these symptoms, after continuing for a day or two, cease gradually, leaving the patient in a debilitated and exhausted state; but where the disease proceeds with much violence, there arises great depression of strength, with cold clammy sweats, considerable anxiety, a hurried and short respiration, cramps in the legs, coldness of the extremities, and hiccups, with a sinking and irregularity of the pulse, which quickly terminate in death; an event that not unfrequently happens within the space of twenty-four hours.

Cholera morbus is to be distinguished from diarrhœa and dysentery by the matter which is discharged by stool being pure bile, unmixed with blood or mucus, and with scarcely any admixture of fæces. It may be distinguished from colica pictonum by the evacuations: for in the latter, although there is sometimes a considerable quantity of bilious matter thrown off by vomiting, yet the bowels remain obstinately costive.

Our opinion must ever be unfavourable, when the evacuations upwards and downwards are accompanied by great prostration of strength, much distension of the abdomen, intermitting pulse, cold clammy sweats, a short hurried respiration, constant hiccup, spasms of the extremities, or convulsions: but a gradual diminution of the symptoms, especially the vomiting, succeeded by sleep, or a gentle moisture on the skin, may be regarded in a favourable light.

The appearances generally to be observed on dissection, where cholera terminates fatally, are an accumulation of bile in the stomach and intestines, particularly in the duodenum; relaxation and distension of the biliary ducts and choledochus; and a removal of many of the viscera from their proper places, occasioned probably by the violence of straining in vomiting.

From the very irritable state of the stomach on the first attack of the disease, it is almost impossible for any kind of medicine to be retained on it, and every thing is thrown up again almost as soon as swallowed. To abate this irritation and evacuate the redundant or acrid bile, it will be necessary during this stage of the disorder, to make the patient drink plentifully of diluent liquors, such as barley-water, linseed-tea, rice-gruel, animal broths, or toast and water; and to assist the effect of their operation, tepid mucilaginous clysters of the same nature may likewise be injected.

In addition to these means, flannel cloths wrung out in a warm decoction of poppy-heads slightly bruised, with an addition of about one-fourth of spiritus camphoræ may be applied to the region of

the stomach, taking care to renew them as often as they become cold. Warmth should likewise be applied to the extremities by means of bottles filled with hot water.

As soon as the stomach is sufficiently cleansed by the diluents just recommended, we should endeavour to allay or put a stop to the irritation, by administering opium in sufficiently large doses, but, at the same time, in as small a bulk as possible. It may be given in the quantity of a grain or a grain and a half with four or five grains of the submuriate of mercury in the form of a pill, and be repeated every two hours, as long as the urgency of the case may require: if the pill is rejected, about forty drops of tinctura opii may be added to a small saline draught, swallowed in the act of effervescence; and this may be repeated as frequently as the former. In some instances, where the spasms have been so violent as quickly to induce an alarming state of debility, I have known the quantity of opium to have been increased to eight or ten grains in each dose.

After the administration of opium in the manner advised, it will be proper to immerse the patient as soon as possible in a warm bath, as this will be a likely means of checking the inordinate secretion of bile by restoring the circulation to the surface of the body, and of course relieving the orgasm of the chylopoetic viscera.

In the advanced stage of the disease, where the pulse is weak, and the extremities are cold, opiates, joined with aromatics, as in the confectio opii, and musk in large doses, may be employed with advantage.

Opium, when given by the mouth, even in the smallest possible bulk, is frequently rejected by vomiting in cholera morbus; but if given in an enema, will often in a very short space of time completely remove all the urgent symptoms, and transfer the patient from a state of torture to one of ease. Clysters of this nature, containing about a drachm of tinctura opii in each, ought therefore to be injected from time to time as long as the irritation at the stomach continues.

Two writers on the diseases of India* mention, that a very severe and fatal spasmodic cholera, proceeding from acrid bile in the primæ viæ, is a very prevalent disease on the coast of Malabar, where it is known by the name of *mort de chien*, from its fatality. In this species of the disease, opium in the form of injection has succeeded when all medicines by the mouth have been ineffectual in allaying the orgasm of the stomach and intestines.

A cataplasm of opium and camphor applied to the region of the stomach will sometimes revert its retrograde motions. In several cases where there prevailed great pain and irritation at the stomach, and where the patient could retain nothing on it, I have

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* See Mr. Curtis's Treatise on Indian Diseases. Essay on the Influence of Tropical Climates, by J. Johnson, M. D.

experienced the best effects from the external application of opium to the epigastric region, in the form of an embrocation.* Indeed, no substantial reason can be assigned why it may not be introduced into the system by friction, as mentioned under the head of Colica Pictonum, as well as mercury, camphor, rectified spirit, &c.

The application of a blister to the stomach will sometimes put a stop to the vomiting, by stimulating the skin, and, by sympathy, affecting the stomach. In very severe cases of cholera in this, as well as in warm climates, it might probably be advisable to resort to the external application of nitric acid as a counter-irritant, for a considerable time must elapse before the Spanish fly commences its irritation: which practice has been adopted in that aggravated form of the disease which has lately been developed in Hindostan.—See the succeeding pages.

I have been informed by a medical friend who practised many years in the West Indies, where cholera is of frequent occurrence, as has before been observed, that he found large doses of acidum sulphuricum dilutum to abate the irritation of the stomach more readily than even opium.

Some cases of this disease which had resisted the power of opium, have indeed been successfully treated with diluted nitric acid in small doses, combined with an infusion of calumba or cascarilla. Its valuable effect in allaying the irritation at the stomach I have myself witnessed of late in two or three instances.

As soon as a sedative effect is produced on the stomach and intestines, and the violence of the attack has somewhat subsided, a mild laxative will assist the calomel in carrying off any diseased secretions. The aperient draught prescribed below† may be taken for this purpose.

Although we may have been so fortunate as to procure a remission of the symptoms, still, as the spasms have a great tendency in this disease to recur after the operation of the opium is over, it will by all means be advisable to continue its use for several days in such a manner as to keep up a constant effect.

In ordinary cases, where the evacuations are moderate, astringents would be improper, as they might aggravate the complaint by retaining the vitiated bile in the intestines, which ought to be discharged as long as the morbid secretion from the liver continues.

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* 1. ℞ Spirit. Camphoræ, f. ℥ss.
Tinct. Opii, f. ℥i. M.
ft. Embrocatio, supra ventriculi regionem sæpe infricanda.

† 2. ℞ Magnes. Sulphat. ℥ij.
Infus. Rosæ Compos. f. ℥x.
Syrup. Croci, f. ℥j. M.
ft. Haustus, quartis horis repetendus, si erit necessitas.

*1. Take Camphorated Spirit, half an ounce.
Tincture of Opium, one ounce.
Mix them, and rub a little of the embrocation frequently over the region of the stomach.

† 2. Take Sulphate of Magnesia, two drachms.
Compound Infusion of Roses, ten drachms.
Syrup of Saffron, one drachm.
Mix them, and let the draught be repeated every four hours, as long as may be necessary.

As the debility induced by the disease greatly favours the disposition to spasmodic affections, it may be proper at the same time that we use opiates to employ tonics, as wine, cinchona, and chalybeates (see Dyspepsia), in order to restore the tone of the stomach; taking care at the same time to obviate costiveness by some gentle laxative, such as rhubarb.

As strengtheners of the stomach and intestines, calumba root and cascarilla bark will be found useful medicines, and may therefore be given.*

On recovery, the patient should pay particular attention to his diet, carefully abstaining from all things which might promote a return of the disease, and using only such as are light and nutritive, and which do not readily become acescent. He is likewise to pay a minute attention at the same time to the functions of the skin by flannel or other warm clothing, while the night air and sudden alterations of temperature are to be cautiously guarded against.

There are some people who are subject to periodical attacks of cholera, returning by intervals of a few weeks, producing for two or three days sickness and vomiting, increased heat of the skin, and quickness of the pulse, white tongue, and thirst. Sometimes, however, the bowels are torpid. Heaviness of the eyes and great disposition to drowsiness are commonly the precursors to the attack; and if a dose of hydrargyri submurias joined with some gentle purgative be then given, it will either considerably lessen its violence, or altogether prevent it.

Exercise, particularly on horseback, tonics, and the Bath or Cheltenham waters, are well calculated to afford relief and prevent recurrences of the complaint in all such cases.

It has already been mentioned, that a very severe cholera morbus is a prevalent disease on the coast of Malabar; but towards the close of the year 1817 and the year 1818, this disorder prevailed epidemically throughout Hindostan and the peninsula of India, and several thousands of the natives, both Mussulmans and Hindoos, as also Europeans, fell a sacrifice to it. Almost every corps in the army was attacked with it. It raged with dreadful

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* 3. ℞ Infus. Cascarillæ, f. ℥jss.
Tinct. Calumb. f. ℥iij.
——Card. C. f. ℥j. M.
ft. Haustus, ter die sumendus.

Vel,

4. ℞ Pulv. Calumb. gr. x.
——Zingib.
Ferri Subcarbonat. ää gr. v.
Syrup. Rosæ, q. s. M.
ft. Bolus, bis quotidie capiendus.

* 3. Take Infusion of Cascarilla, one ounce and a half.
Tincture of Calumba, three drachms.
Compound Tincture of Cardamoms, one drachm.
Mix them, and let this draught be taken three times a day.

Or,

4. Take Powder of Calumba, ten grains.
——————— Ginger.
Subcarbonate of Iron, of each five grains.
Syrup of Roses, a sufficiency to form a bolus, which is to be taken twice every day.

fatality in Calcutta, and from January 1818 to the succeeding May, the deaths in that city seldom fell short of two hundred each week.

The practitioners in India admit, that no marked peculiarity in the weather was observed previous to the appearance of this disease in Bengal; and it does not seem to have been at all affected in its severity or progress by the circumstances of season, temperature, or moisture. It was observed to prevail with equal violence when the thermometer was at 40° or 50°, as when it stood at 90° or 100°, during the prevalence of incessant rains for months, and when the face of the earth was scorched up by long-continued heat and drought.

It appears from the reports given in by the practitioners who were commissioned, on the occasion, to scrutinize into the nature of the disease and its treatment, that the principal curative means resorted to were bleeding, calomel, opium, and other antispasmodics. By most, bleeding at the onset was considered as indispensable. It was found, that whilst the blood was flowing from the arm, the most distressing symptoms were frequently relieved; the vomiting generally ceased; the burning sensation at the stomach abated; and the pains and spasms in the abdomen relaxed in severity; and it was always perceived, that the pulse invariably rose while the blood flowed from the arm. Bleeding was however found more necessary in Europeans than in the natives.

Calomel was given in doses of fifteen grains, or a scruple combined with two grains of solid opium, or followed by sixty or one hundred and twenty drops of tinctura opii.—The effect in general was speedy, and its sedative power in this large dose was admitted by all. If the first dose was immediately rejected, it was again repeated and continued without any regard to quantity, according to the urgency of the symptoms. In conjunction with these remedies, cordials and antispasmodics, such as peppermint, æther, the spiritus ammoniæ aromaticus, and other diffusible stimuli, were found the most useful adjuncts; but the whole hopes of success rested on bleeding at the onset of the disease, calomel, and opium.

When these remedies were employed early and conjointly, it is reported that the success was almost in every instance nearly certain. The patient generally fell asleep, and awoke free from the most painful symptoms, or was greatly relieved; and when bile appeared in the alvine evacuations instead of the watery or clayey matter which was the usual attendant, it was a sure sign that the remedies were effective, and amendment taking place. After these effects were obtained, it was necessary to give a mild laxative, and the carbonate of magnesia was generally found to answer the purpose.

It has been mentioned in a preceding page, that the external application of nitric acid had been employed by one of our surgeons in the East Indies, as a counter-irritant in that aggravated

form of cholera morbus which has lately been developed in Hindostan. The rapidity with which it rushes to a fatal termination, and the necessity which exists to administer remedies without the least delay, for the purpose of arresting its progress, led to this practice: because he well knew that much time might elapse before the Spanish fly commences its irritation, thereby permitting the disease to acquire invincible strength.

A good way of employing the acid in severe cases of cholera, (and perhaps it might be beneficial also in cases of a translation of gout or rheumatism from the extremities to the head, heart, or stomach, endangering life,) is to brush the acid slightly diluted in water with a feather over the space of two palms of the epigastric region, neutralizing in some measure the severe effects of the acid, by applying quickly afterwards some alkaline preparation, or by rubbing the parts with a soft rag soaked in cold water, so as to dilute whatever portion of acid that might remain, after it has effected its immediate irritation.

The remedy in question should be employed only in cases of great urgency; for the great irritation which it produces and protracts through the healing process, and the longer period which this process requires, will prevent the employment of it as an external application in common cases.

From the report given in, it appears that the disease was not considered by the majority of practitioners in India as contagious, although judged by some to have such an influence. The proximate or exciting cause of the epidemic was obscure. Rapid atmospherical vicissitudes, in regard to temperature or moisture; exposure of the body to currents of cold air, particularly the chill of the evening, after being heated by violent exercise of any kind, inducing exhaustion or debility; low marshy situations; insufficient clothing; flatulent and indigestible food, especially crude and watery vegetables, which compose a large proportion of the diet of the natives, and particularly that gradual undermining of the constitution which arises in a condensed, dirty, and ill-fed mass of population,—are all unquestionably powerful predisposing causes, and although not absolutely necessary to the production of the disease, might, when present, offer a more unlimited range to the operation of the original cause, whatever it may have been.

DIARRHŒA, OR LOOSENESS.

DIARRHŒA consists in frequent and copious discharges of feculent matter by stool, accompanied by griping, and often at first with a slight degree of vomiting, but unattended either by inflammation, fever, or contagion. The presence of these, with tenesmus and an evacuation of blood and purulent mucus with hardened balls or scybala, instead of natural fæces, which prevail in dysentery, will

always enable the practitioner readily to discern the two diseases from each other. It is to be distinguished from cholera morbus by the discharges not being very bilious, and also by there being no vomiting of bile.

In diarrhœa there is evidently a morbid increase of the peristaltic motion; which morbid increase is the effect of a variety of causes applied either to the body in general, or acting solely on the parts affected.

Of the former may be noticed the application of cold to the surface of the body, so as to give a check to perspiration, and thereby determine the flow of blood more to the interior parts; as likewise passions of the mind, and certain diseases, as dentition, retrocedent gout and rheumatism, fever, &c.

Of the latter, may be enumerated, first, matters taken into the stomach, and acting either from their quantity, as in the case of overcharging the organ, or from their nature, on the state of the stomach itself, producing fermentation, as acid fruits, as also oily and putrid substances, and purgative medicines: secondly, matters generated in the body and thrown into the intestines, acrid bile, pancreatic juice, purulent matter, water in dropsy, worms, &c.: thirdly, mucous matter poured from the mucous follicles of the intestines themselves, in consequence of an increased excretion, and producing what is known by the name of diarrhœa mucosa.

In diarrhœa, each discharge is usually preceded by a murmuring noise and flatulence in the intestines, together with a sense of weight and uneasiness in the lower part of the belly; which cease on the discharge taking place, but are again renewed before the one which is to succeed ensues. The appearance of the stools is various. Sometimes they are thinner than natural, from the admixture of a larger quantity of fluid poured out by the exhalants of the intestines than common. Sometimes they are slimy, and sometimes they are green, when first discharged; sometimes they are evacuated of a yellow colour, but become green on exposure to the air; and now and then they are of a dark brown colour, and very fetid. As the disease advances the stomach becomes affected, and sickness, nausea, and vomiting occasionally prevail; the countenance turns pale, and the skin is dry and rigid. If it continues for any length of time, universal emaciation, dropsy of the lower extremities, and relaxation of every part ensue, together with a great loss of strength.

In forming our prognostic in this disease, we are to be determined by the particular cause from which it arises whether symptomatic of another disorder, and whether of a critical nature; as likewise by the degree of debility present in the system, and the length of time it has continued. Where it attacks pregnant women, it is generally to be considered as attended with danger.

Dissections of diarrhœa which have terminated fatally, have shown, that where it prevailed as a primary disease, ulceration of

some portion of the intestines is the morbid change most usually met with; in which cases the inner membrane is often abraded for a considerable extent, and its muscular coat laid bare. They have likewise shown that the follicular glands are the most frequent seat of such ulcerations, and that they now and then become cancerous, and assume the same appearance as scirrhus and cancer in other parts.

When it has been symptomatic, the morbid changes of the organ belong to the primary diseases, of which the diarrhœa is merely a symptom.

In the treatment of diarrhœa it will be necessary to attend to the following indications:—

First, To obviate or remove the morbid cause.

Secondly, To suspend the increased action which constitutes the disease: and,

Thirdly, To restore the impaired tone of the parts.

Vomits not only cleanse the stomach, but promote all the secretions; and therefore when diarrhœa has arisen from excess or repletion, or from crude and acrid matter in the stomach, the first indication may be answered by giving a gentle emetic in the evening, and some aperient* the succeeding morning.

If it has proceeded from obstructed perspiration, in consequence of exposure to cold, we must then endeavour to restore this by nauseating doses of ipecacuanha,† or of some antimonial prepara-

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* 1. ℞ Pulv. Rhei, ℈j.
Aq. Cinnam. f. ℥iss.
Spir. Lav. C. f. ℥ss. M.
ft. Haustus.
Vel,
2. ℞ Aq. Anethi, f. ℥vi.
Tinct. Rhei, f. ℥ss.
Cretæ Preparat. ℈j.
Syrup. Zingib. f. ℥j. M.
ft. Haustus.
Vel,
3. ℞ Pulv. Rhei, ℈j.
—— Cinnam. Comp. gr. v.
Syrup. Zingib. q. s. M.
ft. Bolus.
Vel,
4. ℞ Magnesiæ Subcarb. ℥ss.
Pulv. Rhei, ℈j.
—— Zingib. gr. x. M.
ft. Pulvis.
† 5. ℞ Pulv. Ipecac. Comp. gr. iij.
—— Cinnam. Comp. gr. v.
Confect, Rosæ, q. s. M.
ft. Bolus, quartis horis sumendus.

* 1. Take Powder of Rhubarb, one scruple.
Cinnamon Water, one ounce and a half.
Compound Spirit of Lavender, half a drachm.
Mix them for a draught.
Or,
2. Take Dill Water, six drachms.
Tincture of Rhubarb, half an ounce.
Prepared Chalk, one scruple.
Syrup of Ginger, one drachm.
This is to be taken as a draught.
Or,
3. Take Powder of Rhubarb, one scruple.
Compound Powder of Cinnamon, five grains.
Syrup of Ginger, a sufficiency to form a bolus.
Or,
4. Take Subcarbonate of Magnesia, half a drachm.
Powdered Rhubarb, one scruple.
———— Ginger, ten grains.
Mix them.
† 5. Take Compound Powder of Ipecacuanha, three grains.
———————— Cinnamon, five grains.
Confection of Roses, a sufficiency to form a bolus, which is to be taken every four hours.

tion, as the pulvis antimonialis, pulvis Jacobi verus, or a solution of the antimonium tartarizatum, which may be repeated every two or three hours in the manner which has been advised under the head of Simple Fever. At night the patient may immerse his feet in warm water.

An irritable state of the bowels, with long-continued diarrhœa, and which had resisted the ordinary means of cure, has been ultimately overcome by the assistance of a warm or vapour bath. This, by exciting the action of the cutaneous arteries of the whole system, and determining a greater flow of blood to the surface of the body, ending in secretion, has relieved the irritable state of the intestines and removed the disease.

Along with these remedies we may recommend a free use of diluents and demulcents, such as a decoction of barley, rice, marshmallows, quince, or calcined hartshorn, mutton suet dissolved in milk, the emulsion of gum. acaciæ, linseed-tea, or toast and water; which will serve both to wash out the offending matter, and to guard the intestines against its further action.

Where a septic fermentation is conspicuous (as in the case of scurvy and other putrid diseases,) we must employ acids, such as ripe fruits, or the acidum sulphuricum in a diluted state.

When diarrhœa seems to arise or be kept up by a septic acid generated in the intestinal canal, and known by frequent eructations of air, diffusing a hot and disagreeable sensation upon the fauces and mouth, griping pains in the bowels, with dejections of a white chalky appearance, which in passing off occasion a hot smarting sensation at the end of the rectum, it will be necessary to have recourse to absorbents* joined with opiates. Alkalies will also be

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* 6. ℞ Mistur. Cretæ, f. ℥iv.
Spirit. Cinnam. f. ℥j.
Liquor. Ammon.Subcarbonat. f. ℥j.
Tinct. Opii, ♏ xxiv.
ft. Mistura, cujus sumat æger cochl. ampla ij. pro re nata.

Vel,

7. ℞ Misturæ Corn. Usti, Oj. in die pro potu ordinario.

Vel,

8. ℞ Ammoniæ Subcarbonat. gr. x.
Aq. Menth. Pip. f. ℥jss.
Tinct. Opii, ♏ x.
Syr. Rosæ, f. ℥j. M.
ft. Haustus, bis in die adhibendus.

Vel,

9. ℞ Magnesiæ, ℈ij.
Pulv. Rhei, gr. viij.
—— Cinnam. Comp. gr. x. M.

* 6. Take Chalk Mixture, four ounces.
Spirit of Cinnamon, one ounce.
Solution of Subcarbonate of Ammonia, one drachm.
Tincture of Opium, forty drops.
Of this mixture let the patient take 2 large spoonsful occasionally.

Or,

7. Take Mixture of Burnt Hartshorn, one pint in the course of the day, as ordinary drink.

Or,

8. Take Subcarbonate of Ammonia, ten grains.
Peppermint Water, one ounce and a half.
Tincture of Opium, fifteen drops.
Syrup of Roses, one drachm.
Mix them, and let this draught be taken twice a day.

Or,

9. Take Magnesia, two scruples.
Powder of Rhubarb, eight grains.
Compound Powder of Cinnamon, ten grains.

a useful class of medicines, and therefore we may advise frequent doses of the subcarbonate of potass dissolved in a little veal broth throughout the course of the day, and at night an anodyne.

In most cases of diarrhœa strong purgatives are found to prove injurious; but where it arises from an acrimony which is extremely tenacious, and that adheres closely to the internal surface of the intestines, or is retained in their folds, those of a mild nature are the only remedies that can remove the disease, and ought therefore in such a case to be employed. The neutral salts will be proper purgatives on this occasion, particularly the magnesiæ sulphas, sodæ sulphas, and soda phosphorata.

Should diarrhœa proceed from acrid or poisonous substances taken into the stomach, the patient must drink plentifully of diluting liquors, with fat broths, to promote a vomiting; and to carry the remainder downwards a purge of the oleum ricini may immediately afterwards be administered. To remove the irritation, small doses of tinctura opii may be taken after the purge operates.

When gout, repelled from the extremities, falls on the intestines and occasions a diarrhœa, it must again be solicited towards the extremities by warm fomentations, cataplasms, or blisters. The perspiration is at the same time to be promoted by drinking plentifully of wine whey. If these means fail, a gentle dose of some stomachic purgative, such as the tinctura rhei compos. may be given; after which the absorbent mixture just recommended may be used in frequently repeated doses, with an addition of ten or twelve drops of tinctura opii to each.

Should diarrhœa be occasioned by worms, which may be known from the sliminess of the stools, mixed with pieces of the decayed worms, medicines must be given to destroy and carry off these vermin, as advised under that particular head.

When it proceeds from a use of unwholesome water, and the situation of the person will not admit of its being changed, the addition of a small quantity of quicklime, chalk, or the like, possibly may correct this effect.

The diarrhœa which attends on dentition should never be checked, unless it prevails in so high a degree as to prove hurtful to the child; in which case four or five grains of toasted rhubarb, with about eight or ten of prepared chalk or magnesia, may be given. This, if repeated three or four times, will generally correct the

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ft. Pulvis, mane vespereque sumendus.

Vel,

10. ℞ Pulv. Cretæ C. cum Opio, gr. xv.

Confect. Rosæ, q. s.

ft. Bolus, bis in die capiendus.

Mix them, and take this powder night and morning.

Or,

10. Take Compound Powder of Chalk with Opium, fifteen grains.

Confection of Roses, a sufficiency to form a bolus, which may be taken twice a day.

acidity, and put a stop to the griping stools. If it fails, we may make trial of the mixture advised below.*

Should purgings return frequently during the time of teething, or upon the striking in of some eruption on the skin, it will be very useful to procure a small discharge behind the ears, or to apply a plaster of pix abietina to the back. For the former purpose, some finely-powdered Spanish flies may be rubbed on the part till a proper excoriation is produced; or we may draw a bit of narrow tape through a piece of the emplastrum cantharidis, and lay it close behind the ears.

A diarrhœa that is likely to prove critical or salutary, is by no means to be rashly stopped; but when it attacks pregnant women, the most powerful remedies ought immediately to be employed.

To answer the second indication in the cure of diarrhœa, viz. that of suspending the increased action which constitutes the disease, it will be proper to have recourse to opiates, which may either be given separately, in small and repeated doses, so as to keep up a constant effect, or be combined with whatever other medicines† we administer.

The third indication is to be effected by a use of astringents, joined with aromatics and tonics. These remedies are especially adapted to those cases where the irritability of the intestines depends upon a loss of tone, and which may occur, either from debility of the whole system, or from causes acting on the intestines alone.

The astringents in most general use are, alum, logwood, catechu, and gum kino, which may be administered in any of the forms advised below.‡ In habitual and long-protracted diarrhœa,

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* 11. ℞ Pulv. Rhei, gr. xv.
Magnes. Subcarbonat. ʒss.
Aq. Anethi, f. ʒiij.
Spirit. Ammon. Aromat. ♏ xvi.
Tinct. Opii, ♏ xiij. M.
ft. Mistura, cujus sumantur cochl. ij. vel iij. minima bis terve in die, vel ut opus sit.

† 12. ℞ Confect. Opii, gr. xv.
Aq. Cinnam.
— Pimentæ, āā f. ʒvj.
Tinct. Kino, f. ʒj.
—— Lav. C. f. ʒss. M.
ft. Haustus, 4ta vel 6ta quaq. hora sumendus.

‡ 13. ℞ Aluminis Pulv.
Catechu Extract. āā gr. x.

* 11. Take Powdered Rhubarb, fifteen grains.
Subcarbonate of Magnesia, half a drachm.
Dill Water, three ounces.
Aromatic Spirit of Ammonia, twenty-four drops.
Tincture of Opium, twenty drops.
Of this mixture, two or three tea-spoonsful are to be taken twice or thrice daily, as may be judged necessary.

† 12. Take Confection of Opium, fifteen grains.
Cinnamon Water,
Pimento Water, of each six drachms.
Tincture of Kino, one drachm.
Compound Tincture of Lavender, half a drachm.
This draught may be taken every fourth or sixth hour.

‡ 13. Take Powdered Alum,
Catechu, of each ten grains.

some patients have derived much benefit from drinking about a pint of lime-water a day, mixed with an equal quantity of milk, in which an ounce of gum. acaciæ has been dissolved.

The tonics which are most likely to prove useful are, the cinchona, cusparia, simarouba, quassia, and cascarilla barks, calumba-root, preparations of iron, and chalybeate waters, together with a proper quantity of Port wine taken daily. Where this becomes acid on the stomach, Madeira, sherry, or weak brandy and water, may be substituted. The above medicines may be administered as here recommended,* or as prescribed under the head of Dyspepsia.

Opii, gr. ss.
Confect. Ros. q. s. M.
ft. Bolus, ter quaterve die capiendus.

Vel,

14. ℞ Misturæ Cretæ, f. ℥v.
Extract. Hæmatoxyli, ℥ss.

Aq. Pimentæ, f. ℥ij.
Tinct. Kino, f. ℥j.
Syr. Zingib. f. ℥ij. M.
ft. Mistura, cochl. ij. magna ter quaterve in die adhibenda.

Vel,

15. ℞. Confect. Aromat. ℥j.
Aq. Cinnam. f. ℥ij.
— Fontan. f. ℥iv.
Tinct. Catechu, f. ℥ij.

—— Opii, ♏ xxxiv. M.
ft. Mistura.

* 16. ℞ Cort. Cascaril. Contus.
—— Simaroub. C. āā ℥ij.

Coq. ex Aq. Fontan. Oj. ad f. ℥viij. Colat. adde

Spirit. Cinnam. f. ℥j.
Tinct. Kino, f. ℥ij. M.
ft. Mistura, cujus sumat cochl. magna iij. ter quaterve in die.

Vel,

17. ℞ Infus. Cort. Cuspariæ, f. ℥vj.

Tinct. Calumb. f. ℥j.
—— Catechu, f. ℥ij.
Spirit. Pimentæ, f. ℥ss. M.
ft. Mistura.

Vel,

18. ℞ Cort. Granat. Contus. ℥ij.

Rad. Simaroub. C. ℥ss.

Aq. Ferventis, f. ℥xvj. macera per horas duas, et colaturæ adde

Confect. Aromat. ℥j.

Opium, half a grain.
Confection of Roses, a sufficiency to form a bolus, which is to be taken three or four times a day.

Or,

14. Take Chalk Mixture, five ounces.
Extract of Logwood, half a drachm.
Pimenta Water, two ounces.
Tincture of Kino, one drachm.
Syrup of Ginger, two drachms.
Of this mixture, the dose may be two large spoonsful three or four times a day.

Or,

15. Take Aromatic Confection, 1 drachm.
Cinnamon Water, two ounces.
Pure Water, four ounces.
Tincture of Catechu, two drachms.
———— Opium, fifty drops.
The dose of this mixture to be the same as the former.

* 16. Take Cascarilla Bark, bruised.
Simarouba Bark, bruised, of each two drachms.
Pure Water, one pint. Boil them slowly until reduced to eight ounces, strain off the liquor, and add
Spirit of Cinnamon, one ounce.
Tincture of Kino, two drachms.
Of this mixture, let three large spoonsful be taken three or four times every day.

Or,

17. Take Infusion of Cusparia Bark, six ounces.
Tincture of Calumba, 1 ounce.
———— Catechu, 2 drachms.
Spirit of Pimenta, half an ounce.
Mix them.

Or,

18. Take Pomegranate Bark, bruised, two drachms.
Simarouba Bark, bruised, half an ounce.
Boiling Water, sixteen ounces.
Let them infuse for two hours, strain off the liquor, and add to it
Aromatic Confection, one drachm.

From whatever cause a diarrhœa proceeds, whenever it is found necessary to check it, the diet ought to consist of rice boiled with milk, and flavoured with cinnamon, together with preparations of sago or Indian arrow-root, and the lighter sorts of meats roasted, as veal, lamb, or chickens. Weak brandy and water, or diluted wine, may be substituted for malt liquor as common drink.

Those who are liable to frequent returns of this disease, either from a peculiar weakness, or too great an irritability of the bowels, should live temperately, avoiding crude summer fruits, most kind of vegetables, all unwholesome food, and meats of hard digestion. They ought likewise to beware of cold, moisture, or whatever may obstruct the perspiration; and they should wear flannel next to the skin.

DIABETES.

Weariness and disinclination to motion or exertion, with the feelings of weakness, dryness and harshness of the skin, costiveness, great thirst, a voracious appetite, accompanied by an apparent defect in the process of chylification, gradual emaciation, a large proportion of saccharine and other matter, which is generally voided in a quantity far exceeding that of the aliment or fluid introduced, are the characteristics of this disease. It has been usual to apply different names to it, as the diabetes mellitus, wherein the urine is of a fragrant smell, and of the colour and taste of honey, and the diabetes insipidus, with limpid urine, not sweet; but some have considered this division as more fanciful than real, and more systematic than useful.

Those of a shattered constitution, and those who are in the decline of life, are most subject to its attacks. The few cases which have occurred to me in practice, all arose in persons who had addicted themselves to spirituous liquors, and who at the same time fared hard, and were much exposed to cold. It not unfrequently attends on hysteria, hypochondriasis, dyspepsia, and

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Tinct. Card. Comp. f. ℥j. M.

℞. Mistura, cujus sumantur cochlearia larga tria ter quaterve in die.

Vel,

℞. ℞ Decoct. Cinchonæ, f. ℥jss.

Tinct. ejusd. C. f. ℥ij.

—— Kino, f. ℥j.

—— Opii, ℥ vij. M.

℞. Haustus, 4tis aut 6tis horis sumendus.

Compound Tincture of Cardamoms, one ounce.

Of this mixture, three large spoonsful are to be taken three or four times a day.

Or,

℞. Take Decoction of Peruvian Bark, one ounce and a half.

Compound Tincture of the same, two drachms.

Tincture of Kino, one drachm.

—— Opium, ten drops.

Mix them for a draught, to be taken every four or six hours.

asthma; but it is always much milder when symptomatic, than when it appears as a primary affection.

Diabetes may be occasioned by a use of strong diuretic medicines, intemperance of life, and hard drinking, excess in venery, severe evacuations, immoderate use of acid drinks, excessive labour joined to a poor vapid diet, and the depressing passions, or by any thing that tends to produce an impoverished state of the blood, or general debility. Some individuals have an hereditary disposition to the disease, as has been noticed in a communication from Dr. Storer to Dr. Rollo. In some cases it has arisen from an exposure to cold and suppressed perspiration. It has, however, taken place, in many instances, without any obvious cause.

That which immediately gives rise to the disease has ever been considered as obscure, and various theories have been advanced on the occasion. It has been usual to consider diabetes as the effect of relaxation of the kidneys, or as depending on a general colliquation of the fluids. Dr. Richter, professor of medicine in the university of Gottingen, supposes the disease to be generally of a spasmodic nature, occasioned by a stimulus acting on the kidneys; hence a secretio aucta urinæ, and sometimes perversa, is the consequence. Dr. Darwin thinks, that in diabetes there is another passage from the intestines to the bladder, besides that of the sanguiferous system, through the kidneys, and supposes it is effected by the retrograde motions of the urinary branch of the lymphatic system; which doctrine, although it did not escape the censure of the best anatomists and experimental physiologists, met nevertheless with a very favourable reception on its being first announced. The late Dr. Cullen offered it as his opinion, that the proximate cause of this disease might be some fault in the assimilatory powers, or in those employed in converting alimentary matters into the proper animal fluids; which theory has since been adopted by Dr. Dobson, and still later by Dr. Rollo, surgeon-general to the royal artillery. The liver has been thought by some to be the chief source of the disease; but diabetes is seldom attended with any affection of this organ, as has been proved by frequent dissections, and when observed, it is to be considered as accidental.

My own opinion as to the cause of diabetes mellitus is, that it consists in a perverted or diseased action of the kidneys, and that it is by virtue of this action that the saccharine matter in the urine is produced.

The primary seat of the disease is far from being absolutely determined in favour of any hypothesis yet advanced; but from an attentive consideration of all the circumstances, the weight of evidence appears to induce the majority of practitioners to consider diabetes as depending on a primary affection of the kidneys.

The morbid state in which these organs are usually found on dissection, certainly strengthens the opinion that they are the

primary seat of the disease. From the peculiar matter which is elaborated by the kidneys being secreted in twice its usual quantity, we are at least induced to conclude that their action is very considerably increased. It must, however, be acknowledged, that the excessive increase of appetite, accompanied with an apparent defect in the process of chylification, which are the usual attendants on diabetes, seem to demonstrate that some derangement exists also in the digestive organs. Possibly this may be secondarily.

Dr. Rollo informs us, in his ingenious publication, that from having duly investigated the most remarkable circumstances and changes which took place during the cure in several cases of this disease, he thinks himself authorized to draw the following inferences :—

1st, That the diabetes mellitus is a disease of the stomach, &c., proceeding from some morbid change in the natural powers of digestion and assimilation.

2d, That the kidneys, and other parts of the system, as the head and skin, are affected secondarily, and generally by sympathy, as well as by a peculiar stimulus.

3d, That the stomach affection consists in an increased action and secretion, with a vitiation of the gastric fluid, and probably in too active a state of the lacteal absorbents.

4th, That the cure of the disease is accomplished by regimen and medicines preventing the formation of sugar, and diminishing the increased action of the stomach.

5th, That confinement or entire abstinence from every species of vegetable matter, or a diet solely of animal food with emetics, hepatized ammonia, and narcotics, comprehend the principal means to be employed.

6th, That the success of the treatment, in a variety of cases, in a great measure establishes the five preceding inferences.

7th, That the saccharine matter of the disease is formed in the stomach, and chiefly from vegetable matter, as has been shown by the immediate effects produced by the abstinence from vegetable matter and the use of animal food solely.

8th, That acescency is predominant in diabetic stomachs, which continues even some time after the entire abstinence from vegetable matter, and after the formation of sugar; and that while such acescency remains, the disposition to the disease may be supposed to continue.

9th, That the saccharine matter may be removed in three days, and, by avoiding vegetable matter, will not again be re-produced; but when the disease and the disposition to it will be finally removed, cannot be stated with accuracy. Such knowledge may, however, be acquired in those cases where the patients adhere correctly to rules.

10th, That there are two circumstances to be considered in this disease, which we may separate in the progress of the treatment;

as it has been shown, that though the formation of sugar was prevented, yet the increased action of the stomach remained, and maintained the defect of assimilation, which prevented nutrition. Hence two objects occur in the cure; for it is not yet determined whether the preventing the formation of sugar by an entire abstinence from vegetable matter, and the use of animal food with fats, if properly persevered in, might not ultimately comprehend the other, namely, the removal of the morbid action of the stomach.

11th, That the lungs and skin have no connexion with the production of the disease.

12th, That the quantity of urine is probably in proportion to the quantity of liquids taken in, and has but little dependence on an absorption of fluids from the surface of either skin or lungs.

13th, That though the disease has been shown to consist in an increased morbid action of the stomach, and probably too great a secretion, with vitiation of the gastric fluid; yet the peculiar or specific condition of either, as forming the disease, is acknowledged to lie in obscurity, and must remain so, until the physiology of healthful digestion is properly explained and established.

The following are the objections which have been made to Dr. Rollo's theory of diabetes.

1st, That saccharine matter has not been detected in the blood, nor in the stomach.

2dly, That the disease often shows symptoms of dyspepsia, or weakness of digestion.

3dly, That the stomach affection may be sympathetic of diseased kidney, from the intimate consent between both: and,

4thly, That the kidneys may be capable of forming or secreting matter under a peculiar action, similar to the breasts of women.

In answer to the first of these objections, Dr. Rollo has replied, that it is difficult to ascertain the exact period in the process of digestion, when this change may be looked for, and therefore an emetic might fail in affording the necessary contents. With respect to the blood, Dr. Dobson affirmed the existence of saccharine matter in diabetic blood. In several instances, the serum was turbid and wheyish, and it did not, on standing, undergo the usual changes of animal matter.

To the second objection which has been made to Dr. Rollo's doctrine, he answers, that the increased action of the stomach is of a morbid kind, and connected with debility: being, therefore, irregular and imperfect, it does not accomplish digestion.

To the third objection, Dr. Rollo has replied, that the stomach affections which exist in diabetes, are entirely different from those which take place in consequence of primary morbid conditions of the kidney. He observes, besides, that most cases of the disease have been preceded by stomach derangement, or have been produced by causes immediately operating on the stomach.

To the fourth objection he observes, that the kidneys are not

secreting organs, but separating only, and that a much greater change in their structure than has ever been found must take place before they could become capable of secreting saccharine matter. He further notices, that in some instances of diabetes the structure of the kidneys has not been visibly changed.

In support of the doctrine which Dr. Rollo advances, he has used the following arguments:

1st, The fact, that a stomach affection generally precedes the urinary characteristic symptoms of the disease.

2dly, The fact, that a stomach affection always attends the disease, which materially differs from that sympathetic of primary kidney affection.

3dly, The fact, that a diet of animal food, with an entire abstinence from vegetable or other matter capable of forming sugar in the stomach, removes speedily the general symptoms, the saccharine matter, the quantity of urine, and its unnatural state.

4thly, The fact, that dissection has shown no morbid condition of the kidneys, but what may be referable to a continuance of increased action from the application of a simple stimulus, and probably sympathy, augmenting merely the capacity of their vessels.

Such are the arguments brought forward by Dr. Rollo in favour of his theory; but a still stronger than any of these is the success which has attended his mode of treatment, and which, on his recommendation, has been pursued by other practitioners with a happy effect in some cases of this disease.

Diabetes sometimes comes on slowly and imperceptibly without any previous disorder, and it now and then arises to a considerable degree, and subsists long without being accompanied with evident disorder in any particular part of the system, the great thirst which always, and the voracious appetite which frequently occur in it, being often the only remarkable symptoms; but it now and then happens, that a considerable affection of the stomach precedes the coming on of the disease, and that in its progress, besides the symptoms already mentioned, there is great dryness of the skin, with a sense of weight in the kidneys, and a pain in the ureters, and the other urinary passages. The temperature of the body is usually below the standard of health. The spirits are depressed, the disposition is equally indifferent to study or amusement, and there is evidently a decline of mental energy, with a loss of the power of virility. Ulcerations of the tongue and gums are of frequent occurrence in diabetes, owing probably to the derangement of the digestive functions. Some morbid change in the alvine excretion always accompanies the diabetic habit, and costiveness is perhaps the most common of these: for in some instances the bowels have been so remarkably torpid, that even the most powerful medicines, in large doses, produced but a trifling effect. Very frequently some degree of inflammation

and swelling about the external orifice of the urethra is to be observed.*

It has been remarked, that diabetes is often preceded or accompanied with a pulmonic affection; and we are told by Dr. Bardsley,† that he does not recollect an instance of the disease which was not attended with some affection of the chest.

Under a long continuance of the disease, the patient becomes much emaciated, the feet œdematous; great debility arises, and an obscure fever, with all the appearances of hectic, prevail. In point of number the pulse is very much diversified: in most cases it is quicker than natural, but sometimes it is below the common standard; but whether it be quick or slow, it is generally such as to denote great debility in the system. In some cases vision becomes very indistinct, and the patient is troubled with vertigo.

The urine, in diabetes, from being at first insipid, clear, and colourless, soon acquires a sweetish or saccharine taste, its leading characteristic in many instances.

From some experiments which were made on diabetic urine, the following conclusions have resulted:—1st, That it contains neither urea, nor the earthy phosphates: 2dly, That it does contain a considerable quantity of a brown extract, united with a proportion of sugar: and, 3dly, That when the sugar is absent, its place is sometimes supplied by a bitter principle.

In some instances the quantity of urine is much greater than can be accounted for from all the sources united. Cases are recorded in which from twenty-five to thirty pints were discharged in the space of a natural day, for many successive weeks and even months; and in which the whole ingesta, as was said, did not amount to half the weight of the urine. To account for this overplus, it has been alleged that water is absorbed from the air by the surface of the body, as also that an extraordinary quantity of water is compounded in the lungs themselves.

Dr. Rutherford, professor of botany in the university of Edinburgh, has found, on examining diabetic blood, that it appears to be deficient in the usual quantity of hydrogen gas. He supposes that this deficiency of hydrogen gas has been consumed by uniting, in the lungs, with the oxygen of the atmosphere, and thus forming water. The water thus generated is taken up by the lymphatics, carried to the bronchial glands and through them poured into the general mass of blood, whence it is eliminated by the kidneys.

Dr. Darwin is of opinion, that in the aqueous diabetes the cutaneous absorbents frequently imbibe an amazing quantity of atmospherical moisture; and although it has been mentioned by Dr. Rollo, that one patient whom he weighed, after being ten minutes in a warm bath, did not weigh heavier on his leaving it,

* See Cases of Diabetes, by R. Watt, p. 129. † See his Medical Reports.

still he suspects that if the bath be made very hot, perhaps much above animal heat, the bather may perspire more than he absorbs, and become in reality lighter. In a bath of moderate heat, provided the patient has been previously exhausted by abstinence or fatigue, he may be likely, Dr. Darwin thinks, to absorb much; but if his system be already full of fluids, from the food and liquids which he has previously eaten and drank, he may not then absorb any thing.

That the cutaneous absorbents can imbibe such a quantity of atmospheric moisture as to account for the surplus of urine over the aliment and fluids which are taken, I am by no means inclined to admit.

It has been usual to regard this disease as always attended with great difficulty of cure and no inconsiderable degree of danger, particularly where it attacks persons advanced in years, or whose constitutions have suffered much by any debilitating cause whatever, especially hard drinking; but if we are to credit Dr. Rollo's report, which seems both candid and ingenuous, and has indeed been confirmed by the testimony of other practitioners who have adopted the mode of treatment he recommends, we may presume that it need not in future be regarded in so unfavourable a light, and that cures may be effected under unpromising circumstances, provided a rigid compliance with his plan is observed.

Great abatement of the thirst, and extraordinary desire for food, the skin becoming soft to the touch and perspirable, the bowels more lax or regular, the urine being voided less frequently, and in smaller quantity each succeeding day, being at the same time of a more natural colour, taste, and smell, the dyspeptic affection being much diminished, and the bodily strength somewhat recruited, together with a return of mental energy, are to be regarded as very favourable symptoms; whereas the contrary denote a fatal termination sooner or later.

Dissections of diabetes have usually shown the kidneys to be much affected. In some instances they have been found in a loose flabby state, much enlarged in size, and of a pale ash colour; in others they have been discovered much more vascular than in a healthy state, approaching a good deal to what takes place in inflammation, and containing in their infundibula a quantity of whitish fluid, somewhat resembling pus, but without any sign of ulceration whatever. At the same time that these appearances have been observed in their interior, the superficial veins on their surface were found to be much fuller of blood than usual, forming a most beautiful net-work of vessels, the larger branches of which exhibited an absorbent appearance. In many cases of dissection the whole of the mesentery has been discovered to be much diseased, and its glands remarkably enlarged; some of them being very hard, and of an irregular texture; others softer, and of a uniform spherical shape. Many of the lacteals have likewise been seen considerably enlarged. The liver, pancreas, spleen, and stomach,

are in general perceived to be in a natural state; when they are not so, the occurrence is to be considered as accidental. The bladder is now and then found to contain a quantity of muddy urine; in some cases its coats are much thickened, and its size less than natural.

The fat within the thorax, abdomen, and pelvis, in some instances, has seemed entirely converted into a gelatinous-like matter, somewhat of an amber colour, and when slightly pressed between the fingers, did not appear unctuous. The subcutaneous fat is found in general much diminished.

The treatment of diabetes has hitherto been conducted on the principles of diverting the increased discharge elsewhere, and afterwards of restoring the tone of the parts.

The first indication has been attempted by a use of remedies which open the pores, such as emetics exhibited occasionally, diaphoretics, the warm bath of about 96 or 98 degrees of heat, additional clothing, or the removal to a warm climate. As diaphoretics, the pulvis ipecac. compos. and antimonials combined with opium, have principally been employed. For the purpose of diverting the increased discharge, blisters are sometimes applied over the region of each kidney in succession, and the ulcerated parts kept open afterwards by the unguentum cantharidis, or ceratum sabinæ.

The second indication has been aimed at by astringents and tonics. The astringents which have been most used are, alum, zinci, sulphas, gum kino, catechu, and the sulphuric and nitric acids, but the first and second seem to be the most efficacious, and may be combined together as below,* or be given separately. The tonics generally employed are the different preparations of cinchona, myrrh, and chalybeates, as advised under the head of Dyspepsia, together with cold bathing.

The Bristol Hot-well waters, when drank at the fountain head, have long been celebrated for their good effects in this disease, and have by many been looked on as a kind of specific; they may therefore be resorted to, if the situation and circumstances of the patient will admit of it; but if not, he must be content to substitute lime-water, which may be taken in the quantity of a pint or quart a day, mixed with an equal proportion of milk, by dissolving about half an ounce of gum. acaciæ in each pint of milk, some further advantages may possibly be derived.

The mephitic alkaline water has been much recommended in this disorder, and it is probable that Schweppe's soda-water may be of

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* 1. ℞ Aluminis, gr. xij.
Zinc. Sulphat. gr. ij.
Opii, gr. ss.
Confect. Rosæ, q. s.
ft. Bolus, ter quaterve die sumendus, superbibendo Liquor. Calcis, f. ℥iv.

* 1. Take Alum, twelve grains.
Sulphate of Zinc, two grains.
Opium, half a grain.
Confection of Roses, a sufficiency,
to form a bolus, to be taken three or four times a day, washing it down with about four ounces of Lime-water.

service, as it is well calculated to relieve acidity in the stomach. The soda will be preferable to the vegetable alkali, as being less likely to act on the kidneys. We are informed by Dr. Trotter* that magnesia to the extent of two drachms daily is a valuable medicine in diabetes, and even that some cures have been effected by it alone. That prepared by Mr. Henry is deserving of a preference.

Administering large doses of opium has occasionally been found highly useful in this disease. Some cases recorded in the 4th volume of the Medical Transactions of the London College of Physicians, by Dr. Warren, clearly show the very great influence which opium is capable of exerting over the morbid secretion of the kidneys in this disorder, and point it out as a remedy worthy of attention in addition to animal regimen.†

The tinctura cantharidis is a medicine which has sometimes been employed in diabetes.

Rubbing the skin with oil, or any adhesive liniment, so as to put a stop to the supposed absorption of fluids thereby, has been recommended in diabetic cases. From experiments made by Dr. Gerrard, of the Liverpool Infirmary, as well as by Dr. Rollo, it does not appear, however, that there is any absorption of fluids by the skin in this disease, for the body gained nothing by immersion in a warm bath; this remedy seems therefore of a doubtful nature.

To assist the effects of the means which have been advised, gentle exercise on horseback, along with frequent friction over the kidneys by means of a flesh-brush or flannel, when not in a blistered state, together with warm clothing next to the skin ought to be used. The patient is at the same time to abstain from all strong drink, to make use of animal food as much as possible instead of vegetable, and by all means to avoid external cold, as any thing that checks the perspiration cannot fail to determine a large quantity of fluids to the kidneys. While we pursue these steps, we are to obviate costiveness, and keep the body perfectly open, either with rhubarb or an infusion of senna.

When diabetes is symptomatic of hysteria, hypochondriasis, or asthma, the proper remedies for the primary disease should be administered.

The mode of treatment which has just been laid down is, with some small improvement, that which has hitherto been pursued by most practitioners; but it must be acknowledged to have proved in many instances very ineffectual. This being the case, it is proper to make mention of the plan recommended by Dr. Rollo, which is said to have often performed a cure under the most unpromising circumstances.

The indications to be attended to, he supposes to be, to destroy

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* See Med. and Physical Journal, vol. xlvii. p. 460.

† See also Clinical and Pathological Reports, by Dr. S. Black, Case 1. p. 203.

the saccharine process going on in the stomach ; to promote a healthy assimilation ; to prevent a supposed increased absorpton by the surface ; to diminish the increased action and to change the imagined arrangement of the kidneys.

To answer these indications Dr. Rollo enjoins a diet consisting wholly of animal food, abstaining rigidly from every kind of vegetable matter from which sugar may be produced : he likewise enjoins hepatized ammonia to be taken daily in the doses hereafter to be mentioned ; the skin to be anointed with prepared lard ; exercise to be avoided ; antimonial wine with opium to be taken at night ; an ulceration about the size of half-a-crown to be formed opposite to each kidney, and the bowels to be kept open by aloes and soap.

Dr. Rollo at first was in the habit of using the potassæ sulphuretum ;* but was induced to substitute the hepatized ammonia under the supposition that the alkali of the former had an improper effect on the kidneys.

We are informed by Mr. Cruickshank, chemist to the Ordnance, in some observations added to Dr. Rollo's publication, that the hepatized ammonia, which promises to be a valuable medicine, is easily prepared by making a stream of pure hepatic gas pass through the liquor ammoniæ subcarbonatis Pharm. Londinensis, until no further absorption is perceived, or until the alkali is saturated. The hepatic or sulphurated hydrogen gas should be obtained for this purpose from artificial pyrites, or sulphuret of iron, and the muriatic acid. We are further informed, that the easiest method of making the artificial pyrites, is to raise a piece of iron in a smith's forge to a white heat, and then to rub it against the end of a roll of sulphur : the iron, at this temperature, immediately combines with the sulphur, and forms globules of pyrites, which should be received into a vessel filled with water. Those globules are to be reduced into the powder, and introduced into the proof, to which a sufficient quantity of muriatic acid is to be added. The dose to an adult should not at first exceed three or four drops three or four times a day ; and this dose is to be gradually increased so as to produce a slight giddiness. It should be dropped from the phial at the time of using it into a little distilled water, and be taken immediately.

When we cannot procure hepatized ammonia, we must be content to substitute the subcarbonate of ammonia, which may be given in

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* 2 ℞ Potassæ Sulphuret. gr. x.
Confect. Rosæ, q. s. M.
ft. Bolus, ter in die sumendus.

Vel,

3. ℞ Potassæ Sulphuret. gr. x.
Aq. Menth. f. ℥iss.
Syrup. Zingib. f. ℥i. M.
ft. Haustus, ter in die capiendus.

* 2. Take Sulphuret of Potass, ten grains.
Confection of Roses, a sufficiency.
Form them into a bolus, which may be taken three times a day.

Or,

3. Take Sulphuret of Potass, ten grains.
Mint Water, one ounce and a half.
Syrup of Ginger, one drachm.
This draught is to be taken thrice a day.

the form of pills, ordering about twelve to be taken daily, each containing about four grains of the ammonia.

A case of diabetes mellitus is recorded in the thirteenth volume of the Medical Journal by Mr. Earnest, surgeon to the Sheffield General Infirmary, which was successively treated by putting the patient on a diet consisting principally of animal food, with a generous allowance of porter, giving at the same time the nitric acid in the proportion of from one to three drachms of the acid to two pounds of water, with about an ounce of sugar daily. We are further informed by him, that in three other cases of excessive polydipsia he had known the nitric acid essentially useful. Under the failure of the other means which have been noticed, it will therefore be advisable to pursue this plan.

The nitric acid no doubt is productive of considerable advantage in mitigating the thirst and heat, and thereby lessening the quantity of urine: but of itself it ought to be considered as incompetent to destroy the saccharine impregnation of this fluid, or to arrest the other characteristic symptoms of the disease. A total abstinence from all vegetable food is likewise absolutely necessary.

Numerous indeed are the cases now recorded by different medical writers very clearly demonstrative of the great efficacy of the animal regimen in diminishing the quantity and changing the properties of diabetic urine, and in relieving the concomitant circumstances; and from the repeated observations and experiments which have been made by some of our most eminent physicians, we may, I think, be justified in drawing the inference, that an abstinence from vegetable, and the employment of animal food, together with the nitric acid, opiates, blisters to the loins, and the warm or tepid bath, comprehend the general and most successful method of cure, and are capable of removing the disease in question in its incipient state when unaccompanied with any dangerous organic affection; and that, even in the most acute and aggravated instances of the complaint, a steady perseverence in the proper regimen will arrest the progress of the diabetic symptoms, and bring the patient into a state of convalescence; but that the cinchona, astringents, and alkalies, either alone, or combined with sulphur, (such as the hepatized ammonia,) afford little assistance in subduing diabetes, or even arresting the progress of its characteristic symptoms.

We are however informed by Dr. Ferriar,* that he has cured three confirmed cases of this disease by a combination of cinchona, uva ursi, and opium, taken three times a day, in the proportion of a scruple of each of the former to half a grain of the latter; and from the great success he had met with from this medicine he found it unnecessary to try Dr. Rollo's plan. The doses

* See the new edition of his Medical Histories and Reflections.

were taken with lime-water, which was also directed for the patient's common drink.

In order to restore the patient to general health and strength, an admixture of vegetable and animal food is to be gradually and cautiously entered upon, as soon as ever the saccharine impregnation of the urine and the voracious appetite have disappeared. After the cessation of the diabetic symptoms, great attention should be paid to the state of the primæ viæ, as the tone of the stomach remains for some time much impaired, and the bowels also become torpid, and are liable to inflammation if evacuations be not speedily procured.

The phenomena which diabetes mellitus exhibits in its progress, and the great degree of vascularity and enlarged size of the kidneys which are observed on dissection, have induced some to suppose that an inflammatory action takes place in these organs; which view of the disease, if well founded, would evidently direct to a mode of treatment the very reverse of what has hitherto been pursued. Instead, therefore, of tonics, astringents, cold bathing, and a stimulating diet of animal food, a mild antiphlogistic regimen, with occasional evacuations, and topical remedies, suited to the habit of the patient and the degree of local affection, would promise, they think,* to fulfil the intentions of the practitioner with success.

Several cases of diabetes which were treated successfully by an antiphlogistic regimen, and very copious depletion by venesection, employed under the most unpromising circumstances, such as a feeble low pulse, loss of strength and spirit, cold and œdematous extremities, &c., are recorded by a late writer;† and they seem to support the opinion, that an inflammatory action does really take place in the kidneys of those labouring under this disease.

In the second of these cases, it appears that the operation was repeated again and again, until above 180 ounces of blood had been abstracted; and the result was a perfect restoration of health. During this time the animal diet was employed, but not rigidly: various medicines were also occasionally interposed; but the great agent, and that to which the attention was almost exclusively directed, was bleeding. A very visible change was observed in the appearance of the blood during this process; at first it was black, and had only a very small proportion of crassamentum; but as more and more of it was taken away, it gradually acquired the appearance which it exhibits in persons who labour under inflammatory fever. The same practice was followed with the same result in all the succeeding cases; the condition of the blood was changed, and the health was restored as in the former instance; and it is to the bleeding alone that any essential benefit is attributed.

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* See No. 67 of the Medical and Chirurgical Review.

† See Cases of Diabetes, by Dr. Robert Watt, of Glasgow.

A case is also recorded in one of the numbers of a periodical work,* which was treated by venesection frequently repeated, in an elderly man of seventy-two, with success.

There is a paper in the fifth volume of the Medical Transactions of the London College of Physicians, giving a detail of several cases of diabetes which were successfully treated by the late Dr. Satterley, and which illustrate in a very satisfactory manner the advantages to be derived from a judicious employment of the lancet, as proposed by Dr. Watt. In the first in particular, the symptoms were strongly marked, and the progressive beneficial effects of the successive bleedings so evident, as to induce the patient to desire a more frequent repetition of the remedy than was deemed prudent.

In all the cases the first-drawn blood had the appearance of a homogeneous black mass, possessing no firmness, but resembling treacle, and not separating by rest into serum and crassamentum. After each bleeding, however, it became firmer and more natural in appearance; and in the first of the cases, after the fourth venesection, the crassamentum was covered with a membrane analogous to the buffy coat, but of an intense bright scarlet colour. The quantity of saccharine matter also yielded by each quart of water was found to diminish in proportion as the urine itself was diminished; but even when it was reduced to two quarts daily, sugar was found in it. At seven different times, from February the 19th to March the 11th, one hundred and twenty-six ounces of blood were drawn in this case from the arm, with great and almost uninterrupted mitigation of the symptoms, terminating in a perfect recovery.

ORDER IV.

VESANIÆ.

Impaired judgment, without pyrexia or coma, is the character of this disorder.

MANIA, or MADNESS.

The definition of mania, which has hitherto been generally given, is delirium unaccompanied by fever; but this does not seem altogether correct, as a delirium may prevail without any frequency of the pulse, or fever, or without mania, as happens sometimes with women in the hysteric disease.

Some have attempted to give a definition of mania by making it consist in the raising up in the mind images not distinguishable from impressions on the senses, or, as it may be expressed, inten-

* See No. 29 of the Edinburgh Medical and Surgical Journal.

sity of idea, converting imagination into implicit belief, and producing incorrectness of association, incoherence of expression, or incongruity of action. I think mania may be termed a false perception of things, displayed most generally in the opinion formed by the patient of his nearest friends; in a want of due connexion of the train of thought, marked by an incoherence or raving; and in a resistance of the passions to the command of the will, accompanied, for the most part, with a violence of action and furious resentment at restraint. The incapacity of distinguishing the diseased functions of the mind and the irritability of our actions, in the opinion of Dr. Spurzheim,* constitute insanity.

In mania the mind is not perfectly master of all its functions; it receives impressions from the senses which are very different from those produced in health; the judgment and memory are greatly impaired, if not wholly lost; and the irritability of the body is much diminished; maniacs, it is supposed, being capable of resisting the usual morbid effects of hunger and watching. It has also been a generally received opinion, that they can likewise resist the morbid effects of cold; but we are assured by Mr. Haslam,† late apothecary to Bethlem Hospital, that they possess no such exemption. He tells us, that those under strict confinement in that receptacle are particularly subject to mortifications of the feet; and that those who are permitted to go about in the hospital are always to be found as near to the fire as they can get during the winter season.

Mr. Haslam's observation is confirmed by Professor Pinel;‡ and we are cautioned by him against the belief that the power of resisting cold is universally great. He affirms, that seldom a year has passed during which no fatal accident has taken place, from the action of cold upon the extremities, at the Asylum of Bicêtre, in Paris, to which he is physician.

Great insensibility certainly prevails in some states of madness, and a degree of cold which would create much uneasiness to persons of sound mind, might not incommode maniacs; but experience has shown that they suffer equally from any severity of weather. Some indeed refuse all covering; but these occurrences are not common; and it may be presumed, that by a continued exposure to the atmosphere, such persons might sustain with impunity a low temperature, which would be productive of serious injury to those who are clad according to the exigences of the season. Such endurance of cold is probably more the effect of habit than of any condition peculiar to insanity.

Some writers contend that insanity is a disease wholly of the mind, and not of the body; whereas others suppose that mania in general depends on a physical origin, or arises from disorganiza-

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* See his Observations on Insanity.
† ——————— on Madness.
‡ ——— Treatise on Insanity.

tion, or morbid action of some part of the body, derangement of the intellectual faculties being only the effect;* which supposition is somewhat supported by the appearances frequently to be observed in the head on dissection. But every species of madness, whether it has originated in the mind or the body, becomes the same by continuance. In madness, both the mind and the body must ultimately be diseased; for a disease of the mind soon produces one in the body.

There are two species of madness, viz. the melancholic, and furious. In both these states the association of ideas is equally incorrect. Between melancholic and furious madness there seems however to exist an intermediate species of the disease. Great eccentricity or singularity, dejection of spirits, and violent tendency to immoral habits, notwithstanding the inculcation of the most correct precepts, and the force of virtuous example, may be regarded as only slighter shades of the disorder. By some writers the disease has been distinguished into many varieties; but probably the best division would be into chronic and acute, periodical and habitual.

Madness is occasioned by affections of the mind, such as anxiety, grief, the love of an absent object, the pain of jealousy, sudden frights, violent fits of anger, the disappointment of ambition, the haughtiness of pride, prosperity humbled by misfortune, religious terror or enthusiasm, the frequent and uncurbed indulgence of any passion; or by violent emotion, and abstruse study. In short, it may be produced by any thing that affects the mind so forcibly as to take off its attention from all other affairs. A very frequent cause of insanity arises from the pain of some imaginary or mistaken idea, which may be termed the hallucinatio maniacalis. Violent exercise, intemperance of every kind, and especially in the use of spirituous liquors, a sedentary life, the suppression of periodical and occasional discharges and secretions, repelled eruptions, injuries and malconformation of the head, excessive evacuations, mercury largely and injudiciously administered, and paralytic seizures, are likewise enumerated as remote causes. Mania sometimes arises in consequence of painful protracted parturition. Certain diseases of the febrile kind, particularly phrenitis, have been found at times to occasion madness, where their action has been very violent, or accompanied by delirium.

That insanity originates more generally in a corporeal cause than is allowed, must, I think, be admitted; and perhaps is not unfrequently connected with hepatic derangement. Possibly it may now and then arise from sympathy with parts morbidly excited, and distant from the brain, and this action may be reciprocally exerted.

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* See Observations on Insanity, by Dr. Spurzheim.
——— ——— the Pathology of Insanity, by G. M. Burrows, M. D.

In some cases mania proceeds from an hereditary predisposition or constitutional bias; and of all the maladies to which the human frame is liable, and which can be entailed on posterity, mental derangement is surely the most deplorable. It is an indisputable fact, that the offspring of insane persons are more liable to be affected with insanity than those whose parents have enjoyed sound minds; which shows that a predisposition or constitutional bias to the disease may be entailed by either parent. Moreover, it frequently occurs that the descendants from an insane stock, although they do not exhibit the broad features of madness, shall yet discover propensities and eccentricities equally disqualifying for the purposes of life, and destructive of social happiness.

Some late writers on mania have, however, presumed to deny the fact of hereditary predisposition, or constitutional similarity between parent and progeny;* but this surely is to fly in the face of truth, and to inculcate a doctrine very injurious to society, by throwing individuals off their guard, and encouraging them to intermarry with the descendants or offspring of insane persons.

One who is aware of a decided bias in his own person towards mental derangement, ought to shun the chance of extending and of perpetuating the ravages of so dreadful a calamity. A man so situated, in incurring the risk of becoming a parent, involves himself in a crime which may not improbably project its lengthened shadow,—a shadow too which widens in proportion as it advances,—over the intellect and the happiness of an indefinite succession of beings.† When, as it sometimes happens, an hereditary disposition or bias to this disease appears to sleep through one generation, it will often be found to awaken in the next with even aggravated horrors. Should the child of a maniac escape his parent's malady, the chance is small that the grandchild will be equally fortunate. The continued stream of insanity, although it occasionally conceals itself for a time, may soon again emerge to our view. Strictly speaking, however, it is only the tendency to insanity that is inherited; or, in other words, a greater facility than ordinary to be acted upon by those external circumstances that are calculated to produce the disease. Such is the proper light in which we should view what are termed hereditary predisposition and hereditary disease.

A late writer‡ on the causes and cure of insanity, has very properly animadverted on the inconsistency of some physicians, in admitting an hereditary predisposition to mania, and at the same time denying that it is an hereditary disease.

From the predisposition or bias entailed by persons of an insane

† See Dr. Adams's Treatise on Hereditary Diseases.
—Essay on Insanity, by George N. Hill.
† See Essays on Nervous Affections, by John Reid, M. D.
‡ See Observations on Insanity, by W. S. Hallaran.

stock on their children, and the great pressure of the times, the enthusiasm of certain sectaries, but more particularly the Methodists, and the various exciting causes which have been enumerated, mania appears to be a disorder of much more frequent occurrence than formerly.

All inquiries respecting the proximate cause of mania are involved in such a cloud of obscurity, that I shall not venture to advance any opinion on it. Many physicians have attempted indeed to account for the production of insanity from the morbid appearances observed on dissection; but these vary exceedingly in different cases; and even when they are the most marked and constant, they only serve to denote the progress and ultimate effects, rather than the actual condition wherein the disorder consists. We only know for certain, that in the majority of maniacal persons that have been opened after death, more or less ornanic injury of the brain has been discovered; and that the said organic injury seems to be, for the most part, the consequence of an inordinate determination of blood to the head.

Two constitutions are particularly the victims of madness, the sanguine and melancholic: by the difference of which its appearance is somewhat modified. It attacks persons of all complexions and colours of hair; but out of 265 patients who were examined by Mr. Haslam,* at Bethlem Hospital, 205 were of a swarthy complexion, with dark or black hair; the remaining 60 were of a fair skin, and light brown or red haired. A particular species of insanity as sometimes occurring about the age of puberty, especially in those who have possessed a good capacity and lively disposition, and among females more than men, is noticed by this gentleman; they become by degrees listless and inactive, and the faculties are gradually obliterated, until at last complete and incurable idiotism ensues.

Children, and persons of weak intellectual powers, are never subject to madness; for how can a person despair who cannot think?† On this subject Mr. Locke has a beautiful distinction. The difference, he says, between a madman and a fool is, that the former reasons justly from false data; and the latter erroneously from just data.

The most common form of insanity is the intermitting, or that in which the paroxysms of the disease are divided by lucid intervals. The accession of the paroxysms is far from being regular, but most usually they begin soon after the summer solstice, continue with more or less violence during the heat of summer, and terminate towards the decline of autumn. Mania comes on at different periods of life; but in the greater number of cases it makes its first attack between thirty and forty years of age, probably because people at this period are more liable to be acted

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* See his Observations on Madness.

† See Philosophy of Human nature, by John Duncan, M. D.

upon by the remote causes of the disease, or that a greater number of such causes are then applied. At this age people are generally established in their different occupations; are probably married, and have families; their habits are strongly formed, and the interruptions of them are consequently attended with greater anxiety and regret. Under these circumstances they feel the misfortunes of life more exquisitely.

Sometimes mania, however, instead of being only temporary, or occurring in paroxysms, which go off and return again at certain periods, continues during the whole of the person's life without any intermission, and the patient sinks at last under the violence of the conflict, without any abatement of the symptoms; or a state of perfect idiotism ensues.

Although insanity usually breaks out suddenly, the manners of the patient becoming preternaturally impetuous, his conversation hurried, his mind full of projects, which he pursues with restless activity, there are instances where insanity makes its approach gradually: a certain whimsicality of disposition, and waywardness or singularity of character, are observed for some time, perhaps for years, before the individual is set down by his friends as a maniac; and this is particularly the case in hereditary derangement.

In no two patients is the disease ushered in, or continued, with precisely the same appearances; for the different propensities and habits of different patients lead of necessity to a difference of idea and of expression in each. The precursory symptoms of a maniacal paroxysm are, however, very frequent as follow:—The patient complains of a sense of tightness at the region of the stomach, want of appetite, costiveness, and a sensation of heat in the bowels. He is subject to a kind of uneasiness, which he cannot describe or account for; experiences a degree of fear that sometimes amounts to terror, and feels either little disposition or absolute incapacity to sleep. Soon after these appearances, incoherence and incongruity of idea are betrayed in his outward conduct, by unusual gestures, and by extraordinary changes in the expression and movements of his countenance. He generally holds his head erect, and fixes his eyes and attention upon the heavens. He speaks with a deep hollow voice, walks with a quick and precipitate step, then stops suddenly, as if arrested by the most interesting and profound contemplations. Some maniacs are remarkable for good humour and mirth, which they express by fits of loud and immoderate laughter. There are others again whose taciturnity is perpetual; who express their afflictions by tears, or who sink, without a tear, under the distressing influence of solitary anxiety. This happens in melancholia, to which there are usually added, fondness for solitude, timidity, fickleness of temper, great watchfulness, flatulence in the stomach and bowels, costiveness, and a small weak pulse. Furious madness is marked by severe pains in the head, redness

of the face, noise in the ears, wildness of the countenance, rolling and glistening of the eyes, grinding of the teeth, loud roarings, violent exertions of strength, absurd incoherent discourse, unaccountable malice to certain persons, particularly to the nearest relatives and friends, a dislike to such places and scenes as formerly afforded particular pleasure, a diminution of the irritability of the body with respect to the morbid effects of cold, hunger, and watching, together with a full quick pulse.

Insane persons are said to be usually worse in the morning; but perhaps this is not so generally the case as has been supposed. In many instances, at the commencement of the disease, they are more violent in the evening, and sometimes so the greater part of the night. It is, indeed, well known that the majority of patients of this description have their symptoms aggravated by being placed in a recumbent position. They seem of themselves to avoid the horizontal posture as much as possible when they are in a raving state, and when so confined as that they cannot be erect, will support themselves on the breech.

Of the organs of sense which become affected in those labouring under insanity, the ear has been observed particularly to suffer: few lunatics become blind, but numbers were noticed by Mr. Haslam to be deaf; and those who were not actually deaf, were troubled with difficulty of hearing and tinnitus aurium.

Mania is to be distinguished from phrenitis by the absence of pyrexia and headache; and from delirium, by the state of the pulse, and not being conscious of external objects when roused, and even then the person soon relapses into a state of inattention; whereas in mania he is frequently sensible, and is often planning the means of preventing or revenging supposed injuries. A modern writer* thinks that insanity is distinguished from delirium by the derangement of the intellectual faculties not being connected with bodily disorder, and that it is this circumstance which constitutes the distinction between the two maladies.

An intermittent fever supervening on madness of long standing has been known in some instances to have proved a cure for the disease; the senses have returned when the fever terminated. When madness has arisen in consequence of some other disorder, and when its attacks are slight, and do not return very frequently, a radical cure may possibly be effected; but when it takes place in consequence of an hereditary disposition, or is attended with great melancholy, and a fixed attention to one particular object, be it love or religion, we should not entertain much hope. The difficulty of relieving religious madness is acknowledged by all authors, and many cases have been evidently derived from Methodism in its various forms. It is indeed very obvious that those sects which are most accustomed to call up all the human passions in order to

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* See Practical Remarks on Insanity, by Mr. Crowther.

assist the propagation of their doctrines, must be most exposed to the inconveniences which result from the too violent operation of those passions.

In those cases where mental derangement has originated from a physical state that exists only for a short period, or from the sudden impression of an unlooked-for calamity, an expectation of cure may for the most part be not unreasonably entertained: but when, on the other hand, by a life of debauchery, or the corroding operation of any chronic passion, the mind has been disorganized, there is in general little hope, from either medical or moral regimen, of an entire and permanent restoration. Where there is a predisposition to mental derangement from an hereditary bias, external and accidental causes act with more violence upon it, and more readily overset reason; and such cases are usually most difficult to cure.

Patients who are in a furious state, recover in a much larger proportion than those who are melancholic. Insane persons are found to recover in proportion to their youth. The intervention of lucid intervals is always an important matter; for in proportion to the frequency, duration, and steadiness of these, are we warranted to think favourably of the issue. Under every form of the disease the hope of a recovery is usually proportionate to the time which has elapsed from its actual commencement to the period of its being subjected to a regular treatment; advanced age always rendering the prognosis more unfavourable; for a radical cure has scarcely ever been effected in the instance of a hoary-headed maniac. The probability of recovery is comparatively small after the insanity shall have lasted longer than twelve months as by this time the morbid action seems, for the most part, to tend towards morbid structure, which, when carried to any extent, will prove beyond the reach of medicine, or medical treatment. Where insanity supervenes on epilepsy or palsy, a cure is seldom effected. Should catalepsy follow upon insane paroxysms, the complaint most commonly is fixed for life, and to this occurrence females are more liable than males.

In all cases of insanity, where the first accession had been abrupt and its departure equally so, a renewal within a few weeks may be confidently expected. A perfect recovery from insanity is seldom, if ever, to be looked for when the symptoms have suddenly ceased. Madness from a long course of inebriety is rarely cured, because permanent abstinence is seldom, if ever, attained in habitual drunkards. When the furious state is succeeded by melancholy, and the violent paroxysm returns after this shall have continued a short time, the hope of recovery is but small. A person labouring under furious madness who is attacked with small-pox is generally destroyed. By the books of Bethlem Hospital it appears that not quite a half, but rather more than a third of its patients, are discharged cured of their insanity.

Insanity, after continuing for a longer or shorter period without relief, commonly terminates in fatuity. This destruction of mind is almost always incurable. Sometimes, however, young persons, after having remained in a state of complete fatuity for months, or even years, are suddenly seized with a paroxysm of insanity, on the cessation of which they are restored to reason.

It has been observed by those who superintend madhouses, that the number of females annually brought in considerably exceeds the number of males. The natural processes which women undergo, of menstruation, parturition, and of preparing nutriment for the infant, together with the diseases to which they are subject at these periods, and which are frequently remote causes of insanity, as likewise the sedentary life they usually lead, and the exquisiteness of their feelings, may perhaps serve to explain their greater disposition to this malady. Women affected with mania in consequence of a puerperal state, recover in a larger proportion than patients of any other description: indeed the insanity subsequent to parturition is generally curable, if the curative attempts be rational. From whatever cause the disease may be produced in women, it is to be considered as unfavourable to recovery if they are worse at the period of menstruation, or have their catamenia either in very small or immoderate quantities.

A curious circumstance attending mania is, that by its access other diseases are often cured. Some cases of anasarca which were removed by an attack of mania, are mentioned by Dr. Darwin,* all of which (he thinks) were affected by the increased energy of some parts of the system, owing to the addition of volition to the sensorial powers of irritation, or association.

The morbid appearances most generally to be observed on opening the heads of maniacal subjects are, an opacity of the arachnoid membrane, and occasionally a thickening thereof; a preternatural determination of blood to the membranes as well as the substance of the brain itself; together with an effusion of water into the ventricles, and between its membranes and convolutions. Exclusively of these, ossification of some of the arteries, or a preternatural hardness of the substance of the brain, is occasionally observed. Sometimes the pineal gland has been discovered charged with sabulous matter. Mania has ever been found on dissection to be connected with a morbid state of the brain and its membranes; but whether this peculiar state ought to be regarded as the cause or effect of the disease, is a point not yet satisfactorily ascertained.

From the anatomical observations of Dr. Greding, it appears that the greater number of insane people fall into a state of atrophy or decay towards the close of their life, as it was observed that of one hundred maniacs sixty-eight died in this way. Of all diseases, hydrothorax appeared to be that to which maniacs are most

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* See vol. iii. page 175, of his Zoonomia.

subject, for out of one hundred of them, seventy-six laboured under it. We are informed by the same gentleman, that consumption from an ulcerated state of the lungs appears to be another disease which frequently terminates the existence of insane people; as it was found that of one hundred maniacs there were forty who laboured under phthisis pulmonalis.

Mr. Haslam has observed, that maniacs are more liable to attacks of apoplexy and palsy than other diseases.

Insane people are very subject in the winter to mortification of the toes, feet, and nates, when closely confined, which shows their susceptibility to the effects of cold. The helpless, insane, and bedridden patients are very liable to be attacked with a mortification of the buttocks. It therefore appears a most advisable point that all asylums for the insane should be warmed by means of flues and heated air. In the internal economy of all such buildings this would be an important and humane improvement.

The treatment of mania consists in the management of the patient, in humouring the subject of the mental disease, and the aid which medicine may afford; but although the first is of great consequence, still where the mental faculties are only partially affected, the assistance of medicine is of high importance.

That maniacs require medical aid in the first stage of the disease, cannot, I think, admit of a doubt; and very likely the recovery of such persons will depend in a great degree upon early medical attention and assistance; without it the chance of a cure will be much lessened. When the disease arises in women, (which it is apt to do between the ages of sixteen and forty,) moral treatment alone, let the management be ever so proper, will not be likely to recover them without the aid of medicine.

In the management of the insane, the great objects to be aimed at are, in the first place, that the invalids be separately and properly classed, both in respect to their ages, sexes, condition in life, and kind or degree of their disorder. Secondly, free ventilation, so insured as to guard against undue exposure to the inclemencies of the weather. Thirdly, a rigid system of cleanliness. Fourthly, such a judicious regulation both of mental and bodily exercise as shall excite without fatigue, and exhilarate without exhaustion: and, lastly, a combination of tenderness, lenity, and conciliation, with proper firmness, at the same time, on the part of the keepers.

It should always be the object of the superintendant and keeper to gain the confidence of the patient, and to awake in him proper respect and obedience, which is to be effected by discipline of temper and dignity of manners. Tyrannical severity may excite fear in the lunatic, but it will be mingled probably with contempt. In the management of insane persons, the superintendant must endeavour to obtain a complete ascendancy over them. When this is once effected, he will be enabled on all future occasions to direct and regulate their conduct according as his judgment may suggest. He should possess firmness, and, when occasion may require,

should exercise his authority in a peremptory manner. He should never threaten but execute, and when the patient has misbehaved, should confine him immediately; and as example operates more forcibly than precept, it will be best to order the delinquent to be confined in the presence of the other patients, be the institution a public or private one. Such a conduct will display authority; and the person who has misbehaved becomes awed by the spectators, and more readily submits. When the patient is a powerful and strong man, two or more keepers should assist in securing him; for when the maniac finds his strength or skill in the contest prevail, he is sure to make the most of such an advantage, and the consequence of his victory has sometimes proved fatal to the keeper.* When coercion is absolutely necessary, such an overpowering force ought to be employed as to preclude all possibility of successful resistance, by which means every idea of making any at all will most commonly be extinguished.

The keeper should convince the maniac that all impropriety of conduct will be restrained. A prudent and vigorous coercion will generally restrain his fury, and sometimes restore rationality very speedily. He must then be treated with lenity and kindness, and with the manners due to his station in life, which will insure the respect of the pupil to his master, upon which every indulgence consistent with safety and propriety may be allowed. It is obvious, therefore, that a system of intimidation without cruelty, of restraint without indignity, of rigid order and discipline, combined with lenity and conciliation, is the only rational and successful method of combating the extravagances of lunatics.

To obtain a salutary influence over the wanderings of a maniac, we ought first to secure his confidence. This cannot be done without behaving towards him with a delicacy due to his unfortunate state, which for the most part ought to be regarded, not as an abolition, but as a suppression merely, of the rational faculties. There is indeed ground to apprehend that fugitive folly is too often converted into a fixed and settled frenzy; a transient gust into an irremoveable tenant of the mind; an occasional aberration of intellect into a confirmed and inveterate habit of dereliction, by a premature and too precipitate adoption of measures and methods of management, which sometimes indeed are necessary, but which are only so in cases of extreme and ultimate desperation.

At some asylums for the reception of insane persons, but more particularly those of a public nature, we have just reasons for apprehending that severe and harsh treatment is not unfrequently resorted to, and the strong principle of fear sternly applied by blows, the strait waistcoat, or chains,† to be the most usual means adopted for correcting the wanderings of reason, or the diseased ebullitions of passion; as it is less trouble to fetter by these re-

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* See Observations on Madness, by Mr. Haslam.

† See Report of the Evidence before a Committee of the House of Commons.

straints than by the assiduities of sympathy or affection. Nothing, however, has a more favourable and controlling influence over one who is disposed to, or actually affected with melancholia or mania, than an exhibition of friendship or philanthropy: excepting, indeed, in such cases, and in that state of the disease, in which the mind has been hardened and almost brutalized by having already been the subject of harsh and humiliating treatment.*

By an experiment made in an asylum near York, named the Retreat,† it has been ascertained that the best effects have resulted from a system, the prevailing feature of which is kindness and even certain degrees of indulgence; and that the proportion of old or hopeless cases which have been discharged from thence cured, very far exceeds that from St. Luke's or Bethlem. At the Retreat, the convalescents of every class are frequently introduced into the society of the rational parts of the family. They are also permitted to sit up till the usual time for the family to retire to rest, and are allowed as much liberty as their state of mind will admit. Although the effect of fear is not excluded from this institution when indispensably necessary, yet the love of esteem is considered as a still more powerful principle.

Under slight attacks of mania, where the degree of irritation is trifling, as well as during a state of convalescence, it will not be necessary to confine the patient within doors in fine weather; taking care, however, at the same time, to put it out of his power to escape, or do any injury either to himself or others. His mind is to be soothed, and his attention diverted as much as possible, by getting him to engage in some exercise or amusement that will employ both body and mind at the same time, and that will divert the latter from pursuing any train of thought. He should be recommended to avoid as much as possible thinking upon questions of a perplexing and intricate nature. In melancholia, this plan will be doubly necessary; and we may likewise allow entertaining books, cheerful company, amusing scenes, music of the exhilarating kind, playing at billiards, or even cards. If the patient is fond of gardening, the employment of some portion of his time in this way will prove both healthy and agreeable.

It has been observed, that in all institutions for the insane, the male patients, who assist in digging, planting, weeding, wheeling, wood-cutting and making fires, &c., and the females who are employed in washing, ironing, and scrubbing floors, often recover; while persons whose rank exempts them from performing such services, languish away their life within the walls.

In the management of insane persons, the value of exercise and employment is to be highly estimated. Female patients may be employed in sewing, knitting, or domestic affairs, and many of the convalescents may assist the attendants. Of all the modes by

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* See Essays on Nervous Affections, by John Reid, M. D.

† See Description of the Retreat, near York, by Samuel Tuke.

which patients may be induced to restrain themselves, regular employment is perhaps the most efficacious, and those kinds of it ought doubtless to be preferred, both on a moral and physical account, which are accompanied by considerable bodily action—that are most agreeable to the patient, and which are most opposite to the illusions of his disease, or the hallucination possessing the mind. At the Lunatic Hospital at Charenton,* in France, the experiment has been made to induce the patients to act plays for their amusement. To these exhibitions their friends were invited, and a beneficial effect was produced thereby.†

It has been asserted that some maniacs have been cured by being compelled to constant, and even hard labour; and as a forced attention to the conduct of any bodily exercise is a certain means of diverting the mind from pursuing any train of thought, it is probable that such exercise may be useful in many cases of mania.

Monsieur Pinel, in his Treatise on Insanity, tells us, that at the principal hospitals in Spain, but more particularly the one established at Saragossa, the maniacs capable of working are distributed every morning into separate parties. An overlooker is appointed for each class, who apportions to them all, individually, their respective employments, directs their exertions, and watches over their conduct. The whole day is thus occupied in salutary and refreshing exercises, which are interrupted only by short intervals of rest and relaxation. The fatigues of the day prepare the labourers for sleep and repose during the night. Hence it happens that those whose condition does not place them above the necessity of submission to toil and labour, are almost always cured; whilst the grandee, who would think himself degraded by exercises of this description, is generally incurable: by retaining his privileges, he retains his lunacy.

In violent states of mania, the patient should be confined alone in a dark and quiet room, so that he may not be affected by the stimuli of light and sound, such abstraction more readily disposing to sleep. To prevent him from committing any violence, his hands ought to be properly secured with manacles, and he may likewise be confined by one leg, or he may be strapped by the hands and legs in a large chair fastened to the floor. As a horizontal posture tends to increase the fulness of the vessels in the brain, this should be avoided in the day-time. The strait waistcoat is another mode of confinement well calculated to prevent maniacs from doing any injury either to themselves or others; but in the furious state, and particularly in warm weather, it is apt to irritate

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* The author of the Modern Practice of Physic here begs leave to return his best thanks to M. Goven, attached to this Asylum, for the honour done him by translating this work into the French language. See letters from the Continent during a Tour through France in 1818, inserted in the Gentleman's Magazine for July 1820.

† See Paris, par Monsr. Sangur.

and increase that restlessness which patients of this description usually labour under. Where malevolence forms a prominent feature, and the person is very furious, close confinement in the manner just detailed is doubly necessary; but chains are not to be used on any occasion.

In some asylums, but more particularly in the ward at Guy's Hospital appropriated to insane persons, when bodily restraint is deemed absolutely necessary, instead of the strait waistcoat, in hot weather, a strong leathern belt is substituted, which is girded round the body, with a small strap round each arm; and this allows the patient the use of his hands without occasioning heat, as the strait waistcoat does. This mode of restraining violent patients appears therefore decidedly preferable to the other.

The straw on which such persons lie as are insensible of the calls of nature ought to be changed very frequently, and the strictest attention paid to their bodily cleanliness and that of their apartments, by frequent washings, and proper ventilation throughout the day. The wet patients at Guy's are lodged on bedsteads lined with lead and sloping to one corner, which occasions the urine to run off without any offensive smell remaining, as is the case in other houses.

In slight cases, where the patient is in a condition to be sensible of restraint, he may be punished for any improper behaviour by confining him to his room; by degrading him, and not allowing him to associate with the convalescents, and by withholding those indulgencies he has been accustomed to enjoy; the infliction of corporeal chastisement ought never to be resorted to. All violence and harsh treatment on the part of domestics should strictly be proscribed, being a law of fundamental importance, and highly essential to the prudent and successful management of all institutions for insane persons. Moreover, any confinement of the patient beyond what is absolutely necessary, will inevitably tend to create such an irritation of mind as might greatly interfere with the cure.

In most of the public asylums there is an insufficiency of the number of keepers in proportion to the number of persons entrusted to their care, which unavoidably leads to a proportionably greater degree of restraint than the patients would otherwise be under, and this unnecessary restraint must greatly tend to retard recovery. Another evil by which the recovery of patients is not unfrequently retarded, is, that many of such asylums receive a greater number of insane persons than can comfortably be accommodated; in consequence of which several are lodged in the same room, and not unfrequently two or more are put into the same bed.* Moreover, in some of the asylums they do not pay proper attention in separating those patients who are violent and outrageous from those who are quiet and inoffensive; nor those who are insensible to the

* See Report from the Committee of the House of Commons on Madhouses in England.

calls of nature, from those who are cleanly and orderly. The placing a patient afflicted with deep religious melancholy in the same apartment with one who makes a sport of religion, or to associate a person of a timid disposition with an individual of a violent character, is to commit an act of cruelty towards one of the parties, and highly prejudicial to both. The congregating insane persons together in this promiscuous way, is certainly an evil of pernicious tendency; and therefore I repeat, that the separating and properly classing such invalids, both in respect to their sexes, ages, conditions in life, and kind or degree of their disorder, is a point of high importance in their management within all lunatic asylums.

Persons in a state of convalescence ought always to be kept apart from those who are labouring under a paroxysm of the disease; for by having constantly before their view those who are suffering under the disgusting or affecting symptoms of the malady, their cure would probably not only be retarded, but be ultimately prevented.

Insane persons should be made to rise early, to take such exercise as their condition will admit of, and have their food served up to them at stated times. Independently of such regularity contributing to health, it also renders them more manageable. In all cases of madness it will be proper to remove the patient from those objects with which he was formerly acquainted, as these might call up ideas and the various associations; and on this account a change of situation, and removal from his friends, will be advisable; for it is a fact well known to those who superintend lunatics, that patients are seldom or never recovered at home. It not unfrequently happens, indeed, that maniacs, who have been brought immediately from their families, and who are said to be in a violent and ferocious state at home, become suddenly calm and tractable when placed in a lunatic asylum. On the other hand, it is equally a fact, that there are many patients whose disorder speedily recurs after having been suffered to return to their families, although they have for a length of time conducted themselves, under confinement, in a very orderly manner. The restraint, cunning, and dissimulation, which many insane persons are capable of, are well known to those who are conversant with them; but the ignorant are apt to cry out against secluding them from society, because they probably happen to conduct themselves with propriety before strangers, and in short conversations appear coherent and rational.

To attempt the complete seclusion of a maniac in a furious state at his own house in the bosom of his family, is by no means desirable, and indeed it is seldom practicable; for a patient confined at home naturally feels a degree of resentment, when those whom he has been accustomed to command refuse to obey his orders, or attempt to restrain him.

If, however, a patient be rich, quiet, and manageable without

coercion, the attendance of an affectionate wife, or husband, brother, sister, or friend, may, with proper instruction, be able to do much more than can be expected where a great number are to be attended to.

Various objections have, indeed, been raised against sending maniacs to a place of confinement, both among the highest and lowest classes of society. A principal one is, the fear of severe and cruel treatment, and the hazard of rendering the disorder permanent; but these apprehensions appear groundless; for there must be some grievous defect in the mode of amending the disordered mind, if correct sentiments and rational and orderly behaviour are not inculcated by the habit of self-denial and strong efforts of the will. Let the appeal be fairly made by visiting a maniac at his own house, or at a well-regulated establishment appropriated for the reception of such persons.

To endeavour to refute the notions of lunatics will be labour in vain; it will be best to coincide with their extravagancies, and apparently to humour the prevailing hallucination. The skilful physician will always endeavour to investigate the maniacal idea or hallucination, as it may not only acquaint him with the probable designs of the patient, from whence may be deduced the necessity of confinement, but also may sometimes lead to the most effectual plan of cure. A late writer* on mania, who had long kept an establishment for the reception of lunatics of both sexes, has recorded a number of striking examples, where, by humouring the subject of the mental disease, the most happy effects ensued, and the patients were perfectly restored to reason and health. To assist the young practitioner in applying a judicious moral treatment under similar circumstances, I transcribe one of the cases, which is as follows:—

Case 2d. Mr. ——, aged 40, of a spare and melancholic temperament, remarkable for general and almost universal acquired knowledge, and always possessing singular equanimity, had injured his health by too close an attention to extensive mercantile concerns. At length he was observed to be very attentive to every feeling, of which he made minute descriptions to his family: this increasing, he became a prey to empiricism, read several ridiculous popular pamphlets, and was soon worked up to a belief that his body was the common receptacle of disease: pills, potions, powders, unctions, lotions, and mercurial girdles, were employed and dismissed in succession. The metallic tractors for a time amused him, till it was proved to the patient, and to his friends who witnessed the experiments, that these expensive baubles possessed no more properties than a rusty nail. All the fears of the patient became at length concentred into one; from the contemplation of, and conversation on which, no arguments could divert him: he believed all his sufferings arose from repelled itch. A formal consultation of medical

* See Practical Observations on Insanity, by J. M. Cox, M. D.

men was therefore determined on, who having previously agreed on the propriety of humouring the subject of the mental disease, were unanimously of opinion the conjecture of the patient was just. A medical plan was laid down; some rubefacient applications to different parts of the body occasioned crops of eruptions from time to time, which were washed with some simple preparation. This farce continued a few weeks, and the patient at length was perfectly restored to health and reason.

A number of cases, tending to show the great utility of investigating the maniacal idea or hallucination, are likewise reported by Dr. Darwin, in the 4th volume of his Zoonomia, page 66.

With regard to the diet of maniacs, it is only necessary to observe, that it should be conformable to the general curative plan. If the whole treatment is antiphlogistic or lowering, the diet must be similar: if the curative plan be tonic, the diet must correspond; and if at the same time tonics combined with aperients are indicated, the diet ought not to be in opposition. Although temperance is strictly to be enjoined, still wine may be allowed in moderation during a state of convalescence in melancholia. The criterion of the proper quantity should be that which does not effect the temper of the patient, nor exasperate his aversions. Maniacs who are paralytic, require to be kept warm, and to be allowed a more nutritious diet, and cheering beverage, than insane patients of any other description. In the winter months they suffer extremely.

Lunatics sometimes refuse all food for many days, so as to endanger their lives. In private receptacles it is usual, Mr. Haslam says, to have recourse to the operation of what is called spouting, whereby the front teeth are commonly broken and destroyed. To prevent this, he recommends an instrument,* by which food may be conveyed into the stomach with great facility, and without any injurious consequences to the teeth.

Bleeding has been much employed in mania. In paroxysms of madness, which are preceded by a heightened complexion, wildness and prominence of the eyes, and exuberant loquacity, or where there is obvious plethora, or evident determination and congestion about the head, a use of the lancet, no doubt, is often attended with a happy effect; but bleeding, practised as it frequently is, without rule or bounds, among maniacs, often exasperates the complaint, and reduces the patient to a state of extreme debility, occasioning periodical and curable mania to degenerate into idiotism. Where absolutely necessary, drawing blood from the jugular veins will be preferable to taking it from the arm, or we may draw it from the head, by applying six or eight cupping-glasses to the scalp, after having it shaved. From eight to sixteen ounces may be drawn off in this way, and the operation be repeated as circumstances require.

Blood, when drawn in mania, does not display any inflammatory

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* See his Observations on Madness.

crust or buff, and therefore copious and indiscriminate blood-letting in cases of insanity is neither proper nor necessary. It should be borne in mind that there is a wide difference between insanity and phrenitis, and that venesection is only advisable in the first of these diseases, where there is considerable turgescence in the vessels of the head, or in very plethoric habits.

Against mere insanity, unaccompanied by bodily derangement, medicine appears to be almost powerless; but where an insane person happens to be diseased in body as well as mind, medicine, or more strictly medicinal treatment, is not only of as great importance to him as to any other person, but much greater, as diseases of the body are commonly found to aggravate those of the mind. In acute cases of mania, patients require speedy as well as regular assistance, to prevent that disorganization which might lead to protracted or incurable insanity.

For the purpose of obviating the fulness and tension of the vessels of the brain, purging is generally adopted, and medicines of the drastic kind, such as hellebore, are often made use of; but more advantage will be derived from a frequent exhibition of the potassæ tartras and other cooling purgatives, which are the principal medicines to be depended upon in mania.

It is an assiduous, a continued, an alternating and alterative use of cathartic and opening medicines, the operation of which is gentle, that promises, and in reality has proved, to be beneficial in cases of madness and melancholy. When the nervous system is so much deranged as the cases in question suppose, there is almost invariably a tendency to faulty action in the first passages, and their immediately-connected viscera. This state of the stomach and bowels comes in the course of time to react as it were upon the nervous system, and to prove an occasion for the continuance of that derangement of which it was at first a mere consequence.

Cathartics* are of the utmost importance therefore in the treatment of insanity, but more particularly when the excitement is great; and as constipation is a common occurrence with maniacs, those who have their superintendence should regularly inquire into the state of their bowels. In obstinate cases the submuriate of mercury, joined with a few grains of the extract. colocynth. c., may be used. In mania and other cases where the administration of any medicine in a bulky form is extremely difficult, it would seem as if the croton oil might be substituted with benefit. Due action of the bowels may probably be excited by two drops of it being applied to the tongue. In periodical mania, the paroxysms are usually preceded by obstinate costiveness; and a dose or two of some pur-

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* 1. ℞ Infus. Sennæ Comp. f. ℥ss.
Potassæ Tartrat. ℥ij.
Tinct. Jalapæ, f. ℥ij.
Syrup. Rhamni, f. ℥j. M.
ft. Haustus catharticus.

* 1. Take Compound Infusion of Senna, one ounce and a half.
Tartrate of Potass, two drachms.
Tincture of Jalap, two drachms.
Syrup of Buckthorn, one drachm.
Mix them for a cathartic draught.

gative medicine, at an early period, will frequently put a stop to the progress of the attack; which fact ought to have due weight. Moreover, it has frequently happened, that a speedy convalescence has ensued in mania after the coming on of a diarrhœa, and in a few instances it has proved a cure.

At the commencement of the paroxysms of furious madness, where the eyes look wild and rambling, and there is high excitement, both purging, venesection, and the topical abstraction of blood from the head, by means of several leeches, or the application of cupping-glasses preceded by scarification, will undoubtedly be proper, in addition to having the head shaved, and linen cloths, wetted in some evaporating lotion, kept constantly applied to it: but in melancholia, where there is extreme depression both of strength and spirits, neither active purging nor bleeding should be adopted. In such cases, all debilitating means ought to be avoided, as tending to aggravate the symptoms of the disease, and to increase the probability of supervening idiotism.

Emetics have been recommended by some physicians* in mania, but by the generality of them they have been disapproved of, as being likely to increase the determination to the head, and occasion apoplectic or paralytic attacks. We are told by Mr. Haslam, that from many years' observation, and administration of many thousand emetics to insane persons at Bethlem Hospital, he has not been enabled to place any confidence in this class of medicines, as a cure for insanity; admitting, at the same time, that the lunatic whose stomach was in a disordered state, has been equally benefited with a person in his senses by the operation of a vomit. In my opinion, emetics ought not to be administered, except with the view of removing symptoms that may be concomitant with mania. Small and frequent doses of the antimonium tartarizatum, so as to excite a slight degree of nausea, and thereby determine to the surface of the body, may however be serviceable in those cases where there is a high degree of excitement.

Cold bathing, by diminishing irritation, is a remedy by which maniacs have been relieved, and sometimes entirely cured, especially when applied in a certain manner. This consists in throwing the person into cold water by surprise, by detaining him in it for some length of time, and pouring water frequently on his head, while the whole of the body except the head is immersed; and thus managing the process, so as that, with the assistance of some fear, a refrigerant effect may be produced. That the external application of cold may be of service, we have full experience, from the benefits which have been received in some maniacal cases from the application of ice and snow to the naked head.

Mr. Haslam, however, mentions, that he has known in many instances paralytic affections to have ensued in a few hours after cold

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* See Observations on Insanity, by J. Cox, M. D.
—— Essay on the Cure of Insanity, by G. N. Hill.

bathing, especially where the patient has been in a furious state, and of a plethoric habit. In other cases, he has known vertigo, or a considerable degree of fever, to ensue after a cold immersion. In all cases of furious madness connected with plethora, there can exist no doubt that a cold bath will prove prejudicial.

Warm bathing has been recommended by some physicians, and others again have disapproved of it. Probably it may be most useful to those of a rigid melancholic temperament. The late Dr. Willis was of opinion* that warm bathing might be useful to lunatics, but that cold bathing could seldom be required. Indeed, warm bathing and the judicious administration of cathartics appear to be the best physical agents we can employ upon mental disorder: the effects of the former in calming nervous irritation are often abundantly conspicuous.

At the Retreat, or asylum at York for the reception of insane persons, warm bathing has been used for several years, and is still considered of greater importance and efficacy, in most cases of melancholia, than all the other medical means which have been employed.†

In the lunatic hospital in Paris denominated La Salpêtrière, and which is under the superintendence of Dr. Pinel, great stress is laid upon the tepid bath as a remedy for mania; to which is added, when the patient is riotous, a *douche*, or pumping of cold water, falling several feet on the head.

A novel method of treating insanity is practised by Messrs. Lucett and Delahoyde, at their reception for insane persons at Sion Vale. The process employed by these gentlemen is, however, kept concealed from the public; but it appears from the statement of a Mr. Tardy, that he was engaged in the management and employment of this process with Mr. Lucett prior to the latter's connexion with Mr. Delahoyde, and that during this they treated some cases of mental derangement with variable effects, but striking enough to countenance and encourage further inquiry. The great influence which the process was proved to effect upon the circulation and pulse, was, as far as we can trust to the correctness of our information, caused by the immersion of the patient's body in warm water, and at the same moment pouring a stream of cold water on the naked head. The bath was at first 90 degrees, and subsequently increased to 108. The patient was kept in the bath about four minutes on the first trial, and afterwards from 30 to 40 minutes. The effects produced were a decrease of the velocity, but an increase of fulness of the pulse; a quieting of disturbed and erratic mental action, followed by calm sleep of several hours' continuance.

Opium, when administered to madmen during a violent paroxysm, has hardly ever been found to procure sleep; but, on the contrary, has rendered those who have taken it much more

* See Report of the select Committee appointed to inquire into the State of Lunatics.
† Description of the Retreat, by Samuel Tuke.

furious; and where it has for a short time procured rest, the patient has, after its operation, awakened in a state of increased violence. Opium, to prove serviceable in maniacal cases, ought to be administered in very large doses, such as about two hundred drops of its tincture. It seems however at best to be but a doubtful remedy.

An extensive friction, with a liniment consisting of six or ten grains of opium well triturated with a small quan ity of prepared lard, has been recommended for the purpose of inducing sleep in maniacs, where its internal administration might be prejudicial. Where frictions fail we might possible employ opium in the form of fumigation with some advantage.

Where the patient appears much reduced from the want of sleep, but still we dare not give opium from having found it prejudicial, we may make trial of the extractum papav. albi, or the extractum hyoscyami, in the dose of four or five grains.*

With regard to the medical properties of the hop, or lupulus communis, the experiments made on it show that it is evidently narcotic, inducing sleep like opium; but it seems rather disposed to laxity of the bowels than costiveness. In this disease, as well as in some painful cases where an opiate is greatly wanted, but where it cannot be exhibited in any of the usual forms without producing untoward symptoms, a strong infusion of the hop used both internally and externally, has frequently, it is said, been found to soothe pain, and finally to procure a calm, tranquil sleep. The best preparation, however, of the hop appears to be the tincture, made by digesting four drachms of the lupulus communis in ten ounces of rectified spirit. The dose may be from forty drops to one hundred.

The sedative effects of the digitalis point it out, we have reason to presume, as a useful and powerful remedy after frequent purging and phlebotomy, in cases where great excitement and increased tone prevail in the nervous and arterial systems. It has therefore been used in mania, and not unfrequently with success.† When the derangement is accompanied, and in some degree regulated, by an accelerated circulation, a use of foxglove will be highly proper. A few drops of the tincture, or half a grain of the powder, are to be given at first, and the dose to be gradually increased till the desired effect is produced. To make this permanent, it will however be necessary to keep the constitution for some length of time under the influence of the medicine.

A case of mania, preceded by long epileptic fits of frequent

† See Observations on the Digitalis Purpurea by Dr. Currie, vol. iv. article second, of Memoirs of the Medical Society of London.—See Essay on Insanity, by G. N. Hill.

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* 1. ℞ Camphoræ, gr. x.
Extract. Hyoscyami, gr. v.
Syrup. q. s. M.
Fiant pilulæ iij. pro dos. sextis horis sumendæ.

* 1. Take Camphor, ten grains.
Extract of Henbane, five grains.
Syrup, a sufficiency.
Let the mass be formed into three pills, which may be taken every six hours.

recurrence, and induced by a long and intemperate use of spirituous liquors, some time ago came under my care, wherein, by adopting this plan, the mental affection, as well as the spasmodic, entirely ceased. On discontinuing a use of the digitalis, the patient commenced a course of the oxyd of zinc, joined with stomachics, which completed the cure.

Camphor is a medicine which has been much recommended by some physicians in mania, while by others it is said to be useless. I understand that Dr. Willis gave the camphorated mixture at the same time with the extracts of conium, hyoscyamus, and other narcotics. Might not a combination of it with digitalis prove advantageous?

Blisters and other drains, such as issues or a seton, have likewise been employed in this disease; and when recent, may probably have a good effect. In cases of long standing they have been found ineffectual.

Dr. Monro, in his Observations on Mania, mentions, that a blister, when applied to the head itself, seldom proves useful: and the same circumstance has been noticed by other physicians. When we have recourse to blisters, it will be most advisable therefore to apply them to the neck or back. To keep up a sufficient discharge from them, I have found the ceratum sabinæ far preferable to the unguentum cantharidis.

In the cure of insanity, quietness, and the abstraction of all stimuli, are in general to be enjoined: yet there appears to be exceptions, Dr. Cox* very judiciously observes, both with regard to light and other stimuli; for in some cases total darkness aggravates all the symptoms, excites fear, dread, and apprehension; though in others it may be had recourse to with an intention of producing these effects. It appears a curious circumstance that the conversion of religious melancholy into furious madness is an occurrence that sometimes happens, and when it does, is generally followed by recovery; which has suggested the propriety, in some cases that have resisted the more common means, of producing a degree of excitement by means of stimuli; in fact, keeping the patient for some successive days in a state of intoxication. This plan, we are told, has often occasioned an alleviation of symptoms, and sometimes restored the sufferers to reason.

In cases of mental derangement, originating from the passions of grief, sorrow, or religious fear, and in which the system has sunk into apathy and dulness, the stimulus of galvanism, or of gentle electricity, affords some prospect of relief, more especially if the patient be not very far advanced in life. When we have recourse to the first of these remedies, it will be best to employ a pile consisting only of a few plates at first, that the brain may not be subjected to too violent an action. The same must be carefully guarded against when we resort to electricity.

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* See his Observations on Insanity.

Dr. Cox speaks highly of swinging as a remedy in mania, and he recites many cases where the happiest effects were derived from making use of it. We are told by him, that it may be employed in the common oscillatory way, or in a circular manner of whirl; the patient at the same time sitting erect, or lying horizontally. On persons in health he observed these swings to produce only the common effects, but in proportion to the motion communicated; and sooner by the circular than by the oscillatory, and in the horizontal than in the perpendicular position. In some maniacal cases, independent of these more obvious effects, he noticed that swinging, often repeated, had the singular property of rendering the system sensible to the action of agents whose powers it before resisted. One of its most valuable properties was, its proving a mechanical anodyne. This effect I have myself observed.

After a very few circumvolutions, Dr. Cox has witnessed its soothing, lulling effects: the mind has become tranquil and the body quiescent: a degree of vertigo has often followed, and this has been succeeded by the most refreshing slumbers; an object the most desirable in every case of madness, and procured with the utmost difficulty in general. Maniacs, he has noticed, are not usually sensible to the action of the common oscillatory swing, although it affords an excellent mode of secure confinement, and of harmless punishment. By the protracted action of the circular swing or whirl, he has sometimes seen the patient almost deprived of his locomotive powers; and although it required the combined strength and address of several experienced attendants to place him in it, still he has been taken out of it by a single person: the most profound sleep has followed, and this has been succeeded by convalescence and a perfect recovery, without the assistance of any other means. One of the most constant effects of swinging is a greater or less degree of vertigo, attended by pallor, nausea, and vomiting, and frequently by an evacuation of the contents of the bladder.

Where insanity attacks a patient of a delicate habit, with previous consumptive or pulmonic symptoms, swinging in the common way has in many instances proved highly beneficial.

It has been mentioned in the preceding pages, that insane people, when closely confined, are very subject, in winter, to a mortification of the toes, feet, and nates, and that the helpless and bed-ridden patients are very apt to be attacked with a mortification of the buttocks. In all cases of this nature, we are told by Mr. Crowther,* who was, formerly, surgeon to Bethlem Hospital, that the treatment usually adopted (consisting of hot fomentations, lint dipped in stimulating liniments applied warm, and over the whole a poultice of the grounds of stale beer and oatmeal) invariably failed; whereas, by substituting an embrocation of rectified spirit, lowered with water according to the degree of sensibility of the parts, and afterwards covering them

* See his Practical Remarks on Insanity.

with soft lint spread with the ointment here prescribed,* not a single death arising from a mortified state of the nates afterwards happened.

When madness has taken place in consequence of great debility and weakness, as sometimes happens at the close of typhus mitior, all evacuations whatever ought to be avoided, a nutritive and restorative diet should be allowed, and a regular course of the cinchona bark and other bitters, together with chalybeates, be entered upon; the patient taking at the same time such daily exercise in the open air, either in a carriage or on horseback, as his strength will admit.

The mind is apt to be much affected, both after abortion and delivery; and in some instances the woman becomes either melancholic or mad, the latter being more frequent. This mania is in general sudden in its attack, and is often preceded by great palpitation and some other nervous affection. Puerperal mania seldom takes place without a suppression of the lochia, or of the lacteal secretion.

The most common time for it to begin is a few days, or a week or two, before delivery. Sometimes it occurs after some months, during nursing, or soon after weaning. It has occasionally been noticed to have arisen even at the commencement of labour.

From the observations of Mons. Esquirol, Physician in Ordinary to the Salpêtrière Hospital, it appeared to him, 1st, That mental derangement is more frequent among women who are recently confined, than those giving suck. 2dly, That the danger diminishes in proportion to the length of time that has elapsed since the accouchement: and 3dly, That women are much more subject to the complaint after weaning, than during the period of lactation.

The approach of the disease is announced by symptoms which excite little apprehension, because they so often occur without any such termination. The pulse is weak without any manifest cause; the nights are restless, and the temper is easily ruffled: soon however there is an indescribable hurry and peculiarity of manner; the woman's conduct and language become wild and incoherent, and at length she becomes decidedly maniacal. It will be fortunate if the malady is discovered ere she attempts to do herself some injury.

The disease, although frequently tedious, is oftener got the better of than any other species of mania.

The restorations to health are usually marked either by a return

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* 2. ℞ Unguent. Resinos.
Emp. Resinæ, āā ℥ij.
Bals. Terebinth. ℥i. M.

* 2. Take Resinous Ointment,
Resin Plaster, of each two ounces.
Terebinthinate Balsam, 1 ounce.
Mix them.

of the lochial discharge, by the accession of milk in the breasts, by copious leucorrhœa, by a mucous sanguineous diarrhœa, by a return of the menses, which had been suppressed during pregnancy,—by abscesses, but very rarely by pregnancy.

In the treatment of puerperal mania our attention should be directed to the following circumstances:—1st, To protect the patient from injuring herself; and should there be any difficulty in confining her to bed, if necessary we may have recourse to the strong leathern belt before mentioned, or a strait waistcoat, by which she will be restrained. Whenever possible, she ought to be committed to the charge of a nurse accustomed to the task, as she will not be equally safe under the care of any other, however discreet and intelligent. 2dly, To evacuate by occasional gentle purgatives any impurities in the alimentary canal which might keep up or aggravate the original disorder. 3dly, to watch the state of the circulation, and if congestion or inflammation in the brain should supervene, to remove it by antiphlogistic remedies: with an exception to venesection, preferring the application of a few leeches to the pudenda and thighs, together with a blister to the nape of the neck, gentle diaphoretics, and diluent drinks. Probably a warm bath, especially the hip bath, might prove an auxiliary means of relief. 4thly, To procure rest by night, if required, by administering the extractum hyoscyami in sufficient doses during the early stage of the disease, as opium appears to be a doubtful remedy at an early period, although it probably may be productive of benefit at the wane. To allay irritation throughout the day, the camphor mixture combined with æther may be given. 5thly, To manage the mind of the patient according to circumstances, soothing it during irritation, encouraging it during depression, and when the violence of the disease has subsided, to facilitate the recovery of the native feelings and faculties by presenting their natural objects.

In a state of convalescence the mind and attention are to be occupied by cheerful conversation, music, light reading; and afterwards by a change of scene, and regular exercise daily in a carriage or on foot.

Melancholy madness comes on later among lying-in women than furious delirium. The disease differs nothing in appearance or symptoms from melancholy occurring at other times. It is however frequently obstinate, but in common goes off after the child is weaned, and the strength has returned. Sending the patient into the country, if resident in town, will therefore be advisable, as soon as possible removing the child also from sucking her.

Insanity has sometimes been pretended, for the purpose of evading justice after the perpetration of murder. The principal means for the detection of such pretenders to madness are, a consideration of their probable motives for counterfeiting this state; a strict examination of their conduct when they suppose themselves to be alone and not overlooked, contrasted with their behaviour

when they are conscious of being observed; the existence of that peculiar fetor in the exhalations which so generally accompanies the true maniacal state; and the manner in which the subject is affected by the administration of drastic drugs.

INCUBUS, OR NIGHT-MARE.

In this disease there is such a weight and oppression felt as to impress the patient with the idea of some living being having taken its position on the chest, inspiring terror, impeding respiration, and paralyzing the voluntary muscles.

Incubus will sometimes occur in the healthiest person when any indigestible food happens to be in his stomach or the upper portions of the alimentary tube during sleep; but a peculiar habit of body is necessary to render a person liable to it. Those of a contemplative disposition, and of that particular temperament which disposes to hypochondriasis and other nervous diseases, are very subject to its attacks. Sedentary employments, confinement within doors, literary studies, anxiety of mind, &c., all predispose to visitations of incubus. Sailors have been observed to be very liable to this disease.* Hypochondriacs and pregnant women are also its victims, but the male sex more frequently than the female. In advanced life it is not often met with, except where corpulency, asthma, or a tendency to lethargy exists.

The disease always attacks during sleep: if this be profound, the first approach of the fiend is usually in the shape of a disagreeable dream. The patient imagines himself exposed to some danger, or pursued by an enemy whom he finds it impossible to avoid. He frequently feels as if his limbs were tied, or deprived of motion: at other times he fancies himself confined at the bottom of a cavern or vault, and in danger of suffocation. This is often the whole of the sensation which the disease produces, when it goes off either by an oblivious sleep or dream. Here incubus is not fully formed; the predisposition is only evinced.

When the paroxysm actually takes place, the uneasiness of the patient in his dream rapidly increases, till it ends in a kind of consciousness that he is in bed and asleep; but he feels oppressed with some weight which confines him on his back and prevents his breathing, which is now become extremely laborious, so that the lungs cannot be fully inflated by any effort he can make. The sensation is now the most painful that can be conceived: the person becomes every instant more awake and conscious of his situation; he makes violent efforts to move his limbs, especially his arms, with the view of throwing off the incumbent weight, but not a muscle will obey the impulse of the will; he groans

* See Mr. Waller's Treatise on Incubus.

aloud, if he has power to do it, while every effort he makes seems to exhaust the little remaining vigour. The difficulty of breathing goes on increasing, so that every breath he draws seems to be almost the last that he is likely to draw; the heart generally moves with increased velocity, sometimes is affected with palpitation; the countenance appears ghastly, and the eyes half open. The patient, if left to himself, lies in this state generally about a minute or two, when he recovers all at once the power of volition, upon which he either jumps out of bed, or instantly changes his position, so as to awake himself thoroughly. If this be not done the paroxysm is very apt to recur again immediately, as the propensity to sleep is almost irresistible; and if yielded to, another paroxysm of night-mare is, for the most part, inevitable.

Where the disease is established, some confusion of the head, singing in the ears, and spectra before the eyes, will often remain for a time after being roused. There is often also a sense of weight at the stomach, an unpleasant taste in the mouth, acceleration of pulse, and palpitation of the heart.

When the paroxysm goes off, as frequently happens, without the patient awaking, strange hallucinations are occasionally produced, which give origin to reputed visions and supernatural visitations, even among people of great intellectual cultivation. The degree of consciousness, during a paroxysm of night-mare, is so much greater than ever happens in a dream, that the person who has had a vision of this kind, cannot easily bring himself to acknowledge the deceit unless he awakes out of his paroxysm, and finds some incongruity in respect to time or place, which proves the transaction to be an illusion.*

Spasmodic constriction of the diaphragm and muscles of the chest has been assigned by some as the proximate cause of incubus. The disease is not attended with danger.

The complaint seems to be altogether dependent on a state of dyspepsia, and is usually accompanied with a distension of the stomach and bowels; by flatus, constipation, and acid eructations. Whenever the dyspeptic symptoms are urgent, we may administer one of the draughts prescribed below,† repeating it as the occasion may require. Costiveness is to be guarded against by some gentle aperient, such as a few grains of rhubarb with magnesia. Where there is much languor and debility, with loss of appetite,

* See Mr. Waller's Treatise on Incubus, for various deceptions of this kind.

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† 1. ℞ Potassæ Subcarbon. gr. xij.
Aq. Menth. Pip. f. ℥i.
Tinct. Card. Comp. f. ℥iij.
Syrup. Zingib. f. ℥i. M.
ft. Haustus.

† 1. Take Subcarbonate of Potass, twelve grains.
Peppermint Water, one ounce.
Compound Tincture of Cardamoms, three drachms.
Syrup of Ginger, one drachm.
Mix them for a draught.

we may recommend the pilula ferri cum myrrha, together with either the decoctum cinchonæ, infusum gentian. comp. vel quassiæ, or any other agreeable bitter, various formulæ of which may be found under the head of Dyspepsia. The carbonate of soda, mixed with ale or porter, will form a pleasant beverage for those who are liable to dyspeptic symptoms and incubus.

Persons subject to incubus ought carefully to shun all kinds of food likely to prove flatulent or of difficult digestion, particularly for supper; they should be guilty of no intemperance whatever, and should avoid gloomy contemplations, a sedentary life, and particularly intense study, with late hours. Moreover, they should always have some person to sleep near them, so as to be immediately awakened by their groans and struggles; for the sooner a person is roused from a paroxysm of the night-mare the better, as when in a very high degree, it differs little from a fit of epilepsy. Where medicine is not at hand, a glass of any cordial will frequently dispel flatulence, and prevent the paroxysm of incubus.

Acidities in the stomach are productive of the worst species of dreams; and nothing will so effectually prevent and remove such crudities as a little of the subcarbonate of magnesia mixed in peppermint water, and taken at bed-time.

CLASS III.

CACHEXIÆ, OR CACHECTIC DISEASES.

A DEPRAVED state of the whole, or greater part of the body, without any primary febrile or nervous affection, constitutes this class.

ORDER I.

MARCORES.

EMACIATION of the whole body is the character of this order.

ATROPHIA, OR ATROPHY.

THIS disease is marked by a gradual wasting of the body, unaccompanied either by a difficulty of breathing, cough, or any evident

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Vel,

2. ℞ Ammoniæ Subcarb. gr. x.

Aq. Cinnam. f. ℥x.
Tinct. Capsic. f. ℥i.
Syrup. Croci. f. ℥iss, M.

ft. Haustus.

Or,

2. Take Subcarbonate of Ammonia, ten grains.
Cinnamon Water, ten drachms.
Tincture of Capsicum, one drachm.
Syrup of Saffron, one drachm and a half.
Mix them as a draught.

fever at first, but usually attended with a loss of appetite and impaired digestion, depression of spirits, and general languor.

The causes which commonly give rise to it are, a poor diet, unwholesome air, excess of venery, scrofulous disposition, fluor albus, severe evacuations, continuing to give suck too long, a free use of spirituous liquors, mental uneasiness, and worms ; but it frequently comes on without any evident cause.

Young persons of both sexes who are of a delicate make, and at the same time grow very fast, are apt to be attacked with this complaint before they arrive at the age of puberty. It is particularly prevalent in large and populous cities, where children are deprived of ready access to exercise in pure air, or where they are confined in crowded school-rooms. Children, also, who are employed in manufactories, where their occupation and confinement are such as to weaken and enervate them, are very likely to be attacked with it.

Emaciation of the body very frequently arises from a morbid state of the mesenteric glands, induced by scrofulous inflammation, to which they appear peculiarly liable. Whatever may be the effect of diseased mesenteric glands upon the chyle, we are warranted in assigning this as the most frequent cause of bodily emaciation in children, seeing that the two states are almost invariably associated.

Sluggishness, lassitude on the slightest exertion, depravity and loss of appetite, wasting of the muscular flesh, paleness of the countenance, with bloating, swelling, and prominence of the belly, œdema of the lower extremities, an irregular and generally costive state of the bowels, a change in the colour and odour of the fæces, and fetid breath, mark the beginning of the disease. When these symptoms have continued for a little time, they are followed by alternate paleness and flushing of the countenance, heat and dryness of the skin, a feeble and quick pulse, thirst, fretfulness, great debility, and disturbed sleep.

Atrophy, arise from whatever cause it may, is usually very difficult to cure, and not unfrequently terminates in dropsy.

In attempting however to effect this, we should endeavour to find out the cause from which it has originated, and to remove it, if possible. If occasioned by worms, these must be destroyed by the vermifuge medicines advised under that particular head ; if by sensual excesses, or the continuing to give suck too long, these must wholly be discontinued ; if from severe evacuations, these must be suppressed ; if from an impoverished diet and unwholesome air, these must be quickly changed ; if from a scrofulous disposition, deobstruents, purges, and tonics must be had recourse to in due turn (see Scrofula) ; and if from a venereal taint, which is sometimes the case, we must then resort to a use of mercury, with the decoctum sarsæ, and other auxiliaries, as recommended under the head of Syphilis, together with a milk diet.

In all cases of atrophy, the patient should make use of food that

is nutritive and easy of digestion, and it should be taken frequently, but in a small quantity at a time. He should likewise breathe a pure, dry, and wholesome air; taking such moderate exercise every day as his strength will admit, particularly on horseback.

To assist the digestive powers, it will be proper to put him under a course of stomachic bitters, cinchona, and chalybeates. Due evacuations by stool ought to be strictly attended to. Mild laxatives, repeated at certain intervals, will therefore be necessary.

They will preserve the bowels in proper action, carry off fæces which had begun to be offensive and hurtful, and prevent accumulation. Gentle vomitings, with the cupri sulphas, as mentioned under the head of Phthisis Pulmonalis, might possibly, by their stimulus, prove of infinite service. The myrrh mixture, recommended in the cure of the same disease, would be likely to produce a good effect.

In this complaint cold bathing will be proper; but the patient should begin with a tepid bath, reducing it gradually to a cool, and at length to a cold temperature.

When there is a disposition to œdematous swellings of the legs and feet, we should combine diuretics with whatever tonics we administer, as advised in Anasarca.

In children of a scrofulous habit atrophy is often accompanied with an enlargement of the mesenteric glands; and then indigestion, costiveness, or purging, irregular appetite, flushed cheeks, or a total loss of colour, impaired strength and spirits, remitting fever, and a hard and tumid belly, with emaciated limbs, prevail.

In a general way, the principal indications in such cases are,—to remove the obstructions in the lymphatic system, and effect a resolution of the indurated glands of the mesentery; to carry off the viscid matter; and, lastly, to strengthen the system and establish a good digestion, as well by means of proper diet as by medicines.

Among the first, and as general deobstruents, are mercurial and antimonial remedies, neutral salts, soap, steel, and hemlock, to which perhaps may be added with propriety, frictions to the abdomen, and the employment of a tepid salt-water bath. The hydrargyri submurias is the best mercurial we can employ, and may be joined with some purgative medicine, such as rhubarb; this combination may be continued in small doses daily, or every other day, till there shall be some favourable change in the feel and size of the belly. When we do not like to have recourse to mercury, we may administer rhubarb, joined with potassæ tartras, as a purge. Occasional gentle emetics may be good auxiliaries.

The emaciated state to which the patient is generally reduced, even although we should be fortunate enough to remove the obstruction, will require the aid of tonic remedies. To strengthen

the stomach and alimentary canal, and promote a good digestion, the only means by which a nutritious chyle can be obtained, and the body kept in a healthy state, we should have recourse to bitter infusions,* joined with aromatics, cinchona, and steel.† To these may be joined daily frictions of the belly, limbs, and spine. Where the obstructions are removed, the cold bath will be a proper remedy.

Where atrophy arises as a consequence of suckling, the curative indications are, to restore the wasted strength, to relieve the affection of the lungs, and to quiet or remove the fever. The first point then is, for the woman to avoid the exciting cause, and therefore the child must be weaned immediately: she must live on milk, broths, jellies, sago, blanc-mange, salop, Indian arrow-root, and tapioca, with eggs, and a moderate quantity of animal food for dinner. Wine in moderation will likewise be proper. To add to the effects of a restorative diet, a course of the cinchona or other

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* 1. ℞ Infus. Gentian. f. ℥iijss.
Tinct. Cardam. f. ℥ss.
Potassæ Subcarbonat. ℥ss. M.
Capiat cochl. j. infantis bis terve in die.

Vel,

2. ℞ Infus. Cinchonæ, f. ℥ijss.
Tinct. Calumb. f. ℥iij.
Potassæ Subcarbonat. ℈j. M.
Cochl. j. bis in die sumendum.

Vel,

3. ℞ Rad. Calumb. Contus. ℥iij.
Aq. Bullientis, f. ℥iv.
Post horas tres cola, et adde
Tinct. Cinnam. C. f. ℥ss.
Sodæ Subcarbonat. ℥ss. M.

† 4. ℞ Ferri Subcarbonatis, gr. ij. ad v.
Pulv. Calumb. gr. viij. M.
ft. Pulvis mane et vespere capiendus.

Vel,

5. ℞ Pulv. Cinchon. gr. x. ad ℥ss.
Ferri Sulphat. gr. j. ad iij.
ft. Pulv. pro dos. bis in die repetendus.

* 1. Take Infusion of Gentian, three ounces and a half.
Tincture of Cardamoms, half an ounce.
Subcarbonate of Potass, half a drachm.
Mix them and let a child's spoonful be taken twice or thrice a day.

Or,

2. Take Infusion of Peruvian Bark, two ounces and a half.
Tincture of Calumba, three drachms.
Subcarbonate of Potass, one scruple.
Of this mixture, a child's spoonful may be taken twice daily.

Or,

3. Take Calumba Root, bruised, three drachms.
Boiling Water, four ounces.
Let them infuse for three hours, strain off the liquor, and add
Compound Tincture of Cinnamon, half an ounce.
Subcarbonate of Soda, half a drachm.
Mix them. The dose may be the same as of the former.

† 5. Take Subcarbonate of Iron, two to five grains.
Powder of Calumba, eight grains.
Mix them, and let this powder be taken morning and evening.

Or,

5. Take Powder of Peruvian Bark, ten grains to half a drachm, according to the age.
Sulphate of Iron, one grain to three.
Mix them. This powder may be repeated twice a day.

bitters, with the diluted sulphuric acid, myrrh, and chalybeates, as advised for dyspepsia, may be entered upon.

If the affection of the lungs appears to be of an inflammatory nature, and marked by hardness of the pulse, oppressed breathing, or a fixed pain in some part of the thorax, bleeding to the amount of three or four ounces may be necessary, which ought to be drawn from as near the painful part as possible by means of leeches; but if none of these symptoms are present, we should be content with applying a succession of blisters about the thorax. Where there is an inflammatory action, the diet must be confined to vegetables and milk, omitting the cinchona and other medicines, and substituting laxatives, and the saline mixture with nitre, combined with small nauseating doses of tartarized antimony.

The fever is to be removed by shortening the paroxysms when they come on; and during the intervals, by preventing their recurrences by the means pointed out under the heads of Intermittent and Remittent Fevers.

The atrophia ablactatorum belongs to the order of Marcores, but is inserted among the infantile diseases.

PHTHISIS, OR PULMONARY CONSUMPTION.

PULMONARY consumptiom is accompanied with general emaciation, debility, pain in the side or chest, some degree of dyspnœa after walking or speaking, and a cough, which usually proves most troublesome towards morning. In an advanced stage, purulent expectoration ensues with hectic fever and diarrhœa.

Pulmonary consumption does not often occur till after the age of puberty, but in some cases it is evidently formed before that period by tubercles arising. Women are more subject to it than men, as well from their going more slightly clad as from the greater delicacy of their organization.

The causes which predispose to this disease are very numerous; the following are, however, the most general: hereditary disposition; particular formation of the body, obvious by a long neck, prominent shoulders, and narrow chest; scrofulous diathesis, indicated by a fine clear skin, fair hair, delicate rosy complexion, large veins, thick upper lip, a weak voice, and great sensibility: certain diseases, such as catarrh, pneumonic inflammation, hœmoptöe, syphilis, scrofula, small-pox, and measles; particular employments exposing artificers to dust, such as needle-pointers,* stone cutters,

* In the fifth volume of Memoirs of the Medical Society, we are informed by Dr. Johnson, that persons employed in the pointing of needles, by dry-grinding them, are quickly affected by pulmonary complaints, such as cough, and purulent and bloody expectoration; and that they scarcely ever attain the age of forty years. We are also told by Dr. Willan, in his Reports, that hair-dressers, bakers, masons, bricklayers, labourers, laboratory-men, coalheavers, and chimney-sweepers, are very liable to obstinate pulmonic diseases; as are likewise, in an equal degree, the dressers of flax and feathers, and workmen in the warehouses of leather-sellers. Many persons thus engaged struggle with a hard tormenting cough until it terminates in consumption; whereas, by a timely removal into pure air, and having recourse to a suitable regimen, they might soon have been restored to health.

millers, &c.; or to the fumes of metals or minerals under a confined and unwholesome air;* violent passions, exertions, or affections of the mind, as grief, disappointment, anxiety, or close application to study, without using proper exercise; playing much on wind-instruments; frequent and excessive debaucheries, late watching, and drinking freely of strong liquors: great evacuations, as diarrhœa, diabetes, excessive venery, fluor albus, immoderate discharge of the menstrual flux, and the continuing to suckle too long under a debilitated state; and, lastly, the application of cold, either by too quick a change of apparel, keeping on wet clothes, lying in damp beds, or exposing the body too suddenly to cool air when heated by exercise; in short, by any thing that gives a considerable check to the perspiration.

In enumerating the causes of phthisis, a late writer mentions,† that moist air is a very frequent one; he supposes it to operate by occasioning general relaxation and debility; and observes, that the frequency of the disease in Holland has been attributed to this cause. It has not, however, been satisfactorily proved that phthisis is really frequent among the Dutch. The reverse, indeed, has been stated; for Dr. Beddoes, in his Essay on Pulmonary Consumption, quotes Dr. Cogan, a physician who practised many years in Holland, as remarking on the frequency of coughs and colds in that country, in comparison with England; and consumption has been said to be much more rare in the fenny parts of Lincolnshire, than in the high lands in the same county.

The more immediate or occasional causes of phthisis are hæmoptysis, pneumonic inflammation proceeding on to suppuration, catarrh, measles, asthma, and tubercles (which in nineteen cases out of twenty depend on a scrofulous habit) the last of which is by far the most general. The connexion between scrofula and pulmonic consumption is obvious, and generally acknowledged; the latter being often no more than constitutional symptoms, engrafted upon the scrofulous diathesis. At the time when scrofula disappears from the surface of the body, it frequently falls upon the lungs.

Various causes have indeed been assigned for the increasing prevalence at the present time of this distressing disease in the United Kingdom: and among others, the disuse of wood fires, and the general adoption of mineral coal for fuel, has of itself been thought sufficient by some persons to account for it. But the great and sudden changes of temperature or variableness to which our climate is subject, ought properly to be considered as the real cause of the frequency and prevalence of this disease; and there

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* Mr. Polwhele, in his History of Cornwall, mentions, that the miners there are very subject to consumption, and that more than one half of their population fall a sacrifice to it; owing, as he supposes, to their working in what are termed damps, in which the air is mephitic, or unfit for respiration.

† See Dr. Wilson's Treatise on Febrile Diseases, vol. iv.

is great reason to suspect that the warmth and closeness of our apartments, together with the present scanty, light, and flimsy attire of our modish females, very much increase the liability to this complaint. In an economical point of view, as saving an expenditure of fuel, the ingenious contrivance of Count Rumford and others undoubtedly is very efficacious for the purpose; but, in the winter, when we leave such apartments to go into the open air, the sudden change of temperature which we experience often amounts to 25 or 30 degrees; the entrance to the lungs and glottis consequently falls into torpor, from the stream of cold air which is constantly passing between them for the purpose of respiration; and when we re-enter our apartments, the blood rushes with violence into these vessels, previously rendered torpid by the cold; and like the pain our hands experience on coming near a fire after being exposed to cold, we feel a sensation of heat about the glands of the throat: this local inflammation spreads, and we experience all the usual symptoms attendant on a recent catarrh.

In noticing the causes of the vast prevalence of phthisis pulmonalis, I think I may put down the increase of scrofula among us, and we therefore meet with more cases of tubercular consumption than of any other kind. The predisposition to scrofula is inherited by children from their parents, and at some period or other of their life the disease shows itself either in inflammation of some gland that suppurates and breaks externally: or in tubercles in the lungs that proceed to suppuration and ulceration, and terminate in consumption.

That consumptive mortality has very considerably increased in Great Britain within the last century, cannot be denied; and according to the calculations of a modern writer,* the annual victims to consumption in this island are not less than fifty-five thousand persons, out of a population of eleven millions.

By attending to the thick purulent expectoration connected with hectic fever, the disease may readily be distinguished from all others.

All over the Levant, not only the natives but also the physicians, entertain an opinion that phthisis is a disease of a contagious nature; and in the Venetian states there is a law, I understand, which directs the clothes and even furniture of those who have died of consumption to be burnt. Under the same idea, it is customary among the Sicilians to desert the consumptive patient, and when he dies, they burn his bed and bed clothes, and well ventilate and fumigate the apartments in which he lay. It does not seem probable, however, that phthisis pulmonalis is infectious, at least it is not regarded so among us at present, although Morgagni, Van Swieten, and of a still later date, Morton,† were of that opinion; but it often occurs in a family from an exposure to the same

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* See Remarks on the Progressive Increase of Consumption, &c., by W. Woolcombe, M.D.

† See Phthisolog. lib. ii. cap. i.

occasional causes, or from a similarity of constitution and hereditary predisposition. The only way in which I conceive the disease can be conveyed from one person to another, if at all possible, is by sleeping constantly in the same bed with one who labours under it in its ulcerative stage, accompanied with fetid expectoration and cadaverous-smelling night-sweats, and so inhaling his breath. Two or three seemingly well-marked cases of this nature have fallen under my own observation. Respecting the question of contagion in this disease, the late Dr. Heberden observes,* that he has not seen proof enough to say that the breath of a consumptive person is infectious; and yet he has seen too much appearance of it to be sure that it is not; for he has observed several die of consumptions in whom infection seemed to be the most probable origin of their illness, from their having been the constant companions, or bed-fellows, of consumptive persons. Viewing the subject in this light, it would therefore be advisable to avoid being too closely inmated with patients in the last stage of pulmonary consumption.

The proximate cause of phthisis is supposed to be an ulcer in the lungs.

Climate, occupation, and temperament, will diversify the form of phthisis; but for practical purposes, it may be sufficient to distinguish carefully between pulmonary consumption which occurs in persons of the strumous temperament, and that which attacks constitutions of a different description from accidental causes, such as an exposure to cold, or as the consequence of other diseases. The most common and most destructive form of the disease is, the strumous or tubercular phthisis.

The incipient symptoms of phthisis will vary with the cause of the disease; but when it arises in persons of a strumous temperament, or from tubercles, it is mostly thus marked: it begins with a short dry cough, that at length becomes habitual, but from which nothing is spit up for some time, except a frothy mucus that seems to proceed from the fauces. The breathing is at the same time somewhat impeded, and upon the least bodily motion is much hurried; a sense of straitness, with oppression at the chest, is experienced; the body becomes gradually leaner, and great languor, with indolence, dejection of spirits, and loss of appetite, prevail.

In this state the patient frequently continues a considerable length of time, during which he is however more readily affected than usual by slight colds; and upon one or other of these occasions the cough becomes more troublesome and severe, particularly by night, and is at length attended with an expectoration, which towards morning is more free and copious. By degrees the matter which is expectorated becomes more viscid and opaque, and now assumes a greenish colour and purulent appearance;

* See his Commentaries on the History and Cure of Diseases.

being on many occasions streaked with blood. In some cases a more severe degree of hæmoptysis attends, and the patient spits up a considerable quantity of florid frothy blood.

The breathing at length becomes more difficult, and the emaciation and weakness go on increasing. With these the person begins to be sensible of a pain in some part of the thorax, which, however, is usually felt at first under the sternum, particularly on coughing.

At a more advanced period of the disease a pain is sometimes perceived on one side, and at times prevails in so high a degree as to prevent the person from lying easily on that side; but it more frequently happens, that it is felt only upon making a full inspiration, or coughing. Even where no pain is felt, it often happens that those who labour under phthisis cannot lie easily on one or other of their sides, without a fit of coughing being excited, or the difficulty of breathing being much increased.

At the commencement of the disease the pulse is often natural, or perhaps is soft, small, and a little quicker than usual: but when the symptoms which have been enumerated have subsisted for any length of time, it then becomes full, hard, and frequent. At the same time the face flushes, particularly after eating; the palms of the hands and soles of the feet are affected with burning heat; the respiration is difficult and laborious, evening exacerbations become obvious, and by degrees the fever assumes the hectic form.

This species of fever is evidently of the remittent kind, and has in many cases exacerbations twice every day. The first occurs usually about noon, and a slight remission ensues about five in the afternoon. This last is, however, soon succeeded by another exacerbation, which increases gradually until after midnight; but about two o'clock in the morning a remission takes place, becoming more apparent as the morning advances, and in the advanced stage of the disease terminating in a profuse sweat, which, however, is usually partial. During the exacerbations the patient is very sensible to any coldness of the air, and often complains of a sense of cold, when his skin is, at the same time, preternaturally warm. Of these exacerbations, that of the evening is by far the most considerable.

From the first appearance of the hectic symptoms, the urine is high-coloured, and deposits a copious branny red sediment. The appetite, however, is not greatly impaired, the tongue appears clean, the mouth is usually moist, and the thirst is inconsiderable. As the disease advances, the fauces put on rather an inflamed appearance, and towards the termination are often beset with aphthæ, and the red vessels of the tunica adnata become of a pearly white. During the exacerbations a florid circumscribed redness appears on each cheek; but at other times the face is pale, and the countenance somewhat dejected.

At the commencement of hectic fever the bowels are usually costive; but in the more advanced stages of it a diarrhœa often comes on, and this continues to recur frequently during the remainder of the disease: colliquative sweats likewise break out, and these alternate with each other, and induce vast debility. The degree of heat in which the patient is kept has often a great effect on the diarrhœa; for by exposing him to cool air in the morning, the sweat may be much diminished, but the diarrhœa will be increased; and on the other hand, if the diarrhœa be relieved by opiates and astringents, the sweating will be aggravated: thus they frequently alternate for a long time, but in a few instances they are both severe at once.

In the last stage of phthisis, the emaciation is so great that the patient has the appearance of a walking skeleton; his countenance is altered, his cheek bones are prominent, his eyes look hollow and languid, his hair falls off, his nails are of a livid colour and much incurvated, and his feet and ancles are affected with œdematous swellings. To the end of the disease the senses remain entire, and the mind is confident and full of hope. It is indeed a happy circumstance attendant on phthisis, that those who labour under it are seldom apprehensive or aware of any danger; and it is no uncommon occurrence to meet with persons labouring under its most advanced stage, flattering themselves with a speedy recovery, and forming distant projects under that vain hope.

Shortly before death the extremities become cold. In some cases a delirium precedes that event, and continues until life is extinguished.

The cause of hectic fever is generally supposed to be the absorption of vitiated purulency, but possibly it may proceed from other causes. It appears, however, that hectic fever generally attends on extensive suppuration, and it is of little consequence whether it be occasioned by the absorption of pus, or by the inflammation which precedes the suppuration.

As an expectoration of mucus from the lungs may possibly be mistaken for purulent matter, and may thereby give us reason to suspect that the patient labours under a confirmed phthisis when he really does not, it may not be amiss to point out a sure criterion, by which we shall always be able to distinguish mucus from pus. The physical world are indebted to the late Mr. Charles Darwin for the discovery, who has directed the experiment to be made in the following manner:—

Let the expectorated matter be dissolved in sulphuric acid and in caustic lixivium, and add pure water to both solutions. If there is a fair precipitation in each, it is a certain sign of the presence of pus; but if there is not a precipitation in either, it is certainly mucus.

The oxymurias hydrargyri he found to coagulate mucus, but not pus.

Sir Everard Home, in his Dissertation on the Properties of Pus, informs us also of a decisive mode of distinguishing accurately between this and animal mucus.

Pus, he observes, is of the consistence of cream, its colour is whitish, and it has a mawkish taste. When cold, is inodorous; when warm, it has a peculiar smell. Examined by the microscope, it consists of semi-opaque globules, and a transparent colourless fluid, which is coagulated by muriate of ammonia. Pus may be evaporated to dryness without coagulating. Its specific gravity is greater than that of water. It does not putrefy readily; nor is it easily diffused in cold water, but in warm water it is speedily diffused, and remains so after it cools. Animal mucus, and all chemical combinations of animal substances, appear in the microscope to be made up of flakes: this property was first noticed by the late Mr. John Hunter.

Pulmonary consumption is in every case to be considered as attended with much danger; but it is more so when it proceeds from tubercles than when it arises in consequence either of hæmoptysis, or pneumonic suppuration. In the last instance the risk will be greater, where the abscess breaks inwardly and gives rise to empyema, than when its contents are discharged by the mouth. Even cases of this nature have nevertheless been known to terminate in immediate death. The impending danger is generally to be judged of, however, by the violence of the hectic symptoms; but more particularly by the fetor of the expectoration, the emaciation and debility, the colliquative sweats, œdema of the legs, aphthæ and diarrhœa.

An insulated ulcer of the lungs, whether arising from inflammation of the bronchial membrane, the rupture of a blood-vessel, or deep-seated suppuration, may, and does indeed sometimes, even under circumstances apparently hopeless, admit of a cure; but that a recovery can be permanently established when the substance of the lungs is studded with tubercles in a state of suppuration, or proceeding rapidly thereto, would require more confidence in the power of nature and art than they are entitled to. The unkindly nature and secretion of these ulcers, their number, their inaccessibility to any direct application, the impossibility of excluding the atmospheric air from them or obviating its influence, and lastly, of preserving the morbid lungs in a state of quietude, constitute a chain of circumstances through which the arm of science, however ably directed, will never break.

Phthisis pulmonalis has in many cases been found to be considerably retarded in its progress by pregnancy, but when this is over, is hastened to a rapid termination; and in a few has been alleviated by an attack of mania. Some people get a little better in summer, and relapse in winter.

The morbid appearance most frequently to be met with on the dissection of those who die with phthisis, is the existence of tubercles in the cellular substance of the lungs. These are small tumours,

which have the appearance of indurated glands, are of different sizes, and are often found in clusters. Their firmness is usually in proportion to their size: and when laid open in this state, they are of a white colour, and of a consistence nearly approaching to cartilage. Although indolent at first, they at length become inflamed, and are at last changed into little abscesses, or vomicæ; which breaking, and pouring their contents into the bronchiæ, give rise to purulent expectoration, and thus lay the foundation of phthisis.

Such tubercles, or vomicæ, are most usually situated at the upper and back part of the lungs; but in some instances they occupy the outer part, and then adhesions to the pleura are often formed.

When the disease is partial, only about a fourth of the upper and posterior part of the lungs is usually found diseased; but in some cases life has been protracted till not one-twentieth part of them appeared, on dissection, fit for performing their function. A singular observation, confirmed by the morbid collections of anatomists, is, that the left lobe is much oftener affected than the right.

Experience having taught that it is only in the early stage of phthisis that remedies are likely to be employed with success, we ought by all means to pay the greatest attention to the first appearance of the symptoms.

Where a spitting of blood occurs in a person of a phthisical habit, or in one born of phthisical parents, we are to endeavour by every possible means to prevent ulceration from taking place, which is to be done by employing the means for moderating the hæmorrhage, and likewise preventing any future return of it, as advised under the head of Hæmoptysis; and these means and precautions ought to be continued, and extended beyond the period at which phthisis proves chiefly fatal, which is usually between the twentieth and thirtieth year of the person's age.

The phthisis which ensues from pulmonic inflammation proceeding on to suppuration, is only to be prevented by pursuing the means that will procure a resolution of such inflammation. Of these particular mention has been made in the cure of Peripneumony, to which head I beg leave to refer the reader.

When a person of a phthisical habit, or born of parents who have had the same disposition, is, about the age of twenty or sooner, attacked in the spring of the year, or summer, with the symptoms which have been enumerated in the first stage of the disease, and this even in the very slightest degree, we have just grounds to apprehend that tubercles have either formed, or are about to form, in the lungs; in such a case we are to exert our utmost endeavours to prevent their formation, and consequent inflammation and suppuration; for by so doing the disease may be kept under for many years, although in all probability it will not be entirely subdued.

To effect such purposes, we must have recourse to a strict pur-

suance of the antiphlogistic plan, such as bleeding from the arm, as well as topically from the chest, by means either of leeches or cupping, keeping the body open with gentle laxatives, and the use of a spare regimen.

The propriety of the first of these remedies, viz. blood-letting, has, however, of late years been much disputed, and it has indeed fallen a good deal into discredit. Blood-letting, and the rest of the antiphlogistic plan, may formerly have been carried much too far in many cases, I readily admit; but certain it is, that for some years past the opposite system has been carried to an equally hurtful excess.

In the inflammatory and first stage of phthisis, where the patient complains of a difficulty of breathing with pain in his breast or side, has hot restless nights, with a hard contracted pulse, and a cough, there can be no doubt but that bleeding may be of infinite service, provided the quantity taken away bears a just proportion to his strength and habit, and to the severity of the symptoms; but having recourse to it under the stage of ulceration, where the expectoration has become purulent, and where great debility prevails, with night-sweats, and repeating the operation frequently, even in small quantities at a time, as was formerly practised, must evidently prove highly injurious. At an early period, we have in view to procure a resolution of the inflamed tubercles; but in confirmed phthisis this hope no longer exists.

During the first and inflammatory stage of the disease it will be advisable, in compliance with the antiphlogistic plan, to employ gentle laxatives, should the bowels be costive.

When there is any febrile heat, with a cough or pain in the chest, we may give diaphoretics, such as small doses of tartarized antimony or the pulvis antimonialis, repeated three or four times a day, together with the saline mixture and nitre.

It will be necessary to pay a proper attention to regimen. The diet should consist of such things as are nutritive and easy of digestion; as preparations of the different farinacea with milk, most kinds of vegetables and fruits, poached eggs, light puddings, custards, jellies, and animal broths. The different kinds of shell-fish (but more particularly oysters, lobsters, crabs, prawns, and crayfish) may also be proper. Where the symptoms are but trifling, and the patient cannot well refrain from animal food, he may then be allowed such as is of the lightest nature and most easily digested. All fermented liquors, but more particularly spirituous ones, are to be avoided.

Milk of itself is a valuable remedy in phthisis. That of the ass is usually preferred to any other; but it cannot always be obtained: besides, it is generally taken in a very small quantity; whereas, to produce any effect, it ought to make a considerable part of the patient's diet. Instead of taking half an English pint night and morning only, as is usually practised by phthisical patients, they ought to take it at least four times a day,—eating a little bread with it, so as to make it a kind of meal.

If milk should happen to purge, it may be mixed with a little of the powder of prepared chalk, or with a small quantity of the confectio rosæ Gallicæ.

The best effects have been known to proceed from a long-continued use of women's milk, which is indeed the best of all others for consumptive persons; but as it is not to be obtained in a sufficient quantity, we are generally obliged to substitute either asses' milk, or that of cows.

The milk of cows, although not so easily digested as that of asses or mares, may be rendered much lighter by allowing it to stand for some time, and then taking off the cream.

In cases of incipient phthisis, a free use of buttermilk has frequently been attended with much advantage. In order to make it sit easy on the stomach, it should at first be taken sparingly, and the quantity gradually be increased.

To assist in preventing an inflammation of the tubercles in the lungs, it will be necessary that the patient avoids any particular irritation of the part affected, which may arise from the violent exercise of respiration, as in singing, playing on wind instruments, or making long and loud declamations: he is likewise to avoid going into crowded rooms, the air of which, from being inhaled by many different people, becomes at length very unfit for respiration, particularly in those whose lungs are already in a weak and irritable state; he is to refrain from placing his body in such a position, either in reading, writing, or following his ordinary occupation in life, as that the capacity of the thorax shall be the least straitened in consequence of pressure against it: he is to shun all kinds of bodily exercise which require much exertion, and in particular, he is carefully to guard against any exposure to cold—which never fails to determine a greater quantity of blood to the lungs and other internal parts than what is natural.

With the view of guarding against any diminution of cutaneous perspiration, in consequence of an exposure to cold, he should wear a flannel waistcoat next to his skin, together with sliders of the same, and stockings of cotton or worsted. Such a dress may be found a little irksome at first; but time soon reconciles it, and in the end renders it truly desirable and comfortable.

Where the patient cannot bear flannel next the skin, he may make trial of calico, which will keep up a more equable temperature on the surface of the body than linen, and guard against the action of external cold. He is by all means to avoid exposing himself to the piercing north-east winds of this country.

In our climate, tubercles are evidently induced and accelerated in winter, and retarded in summer. A person gets a dry cough in winter or spring, which goes off as the summer advances, and was regarded as a catarrh; but tubercles were forming: if therefore such a person could be removed to a warm climate before the winter comes on, he might escape an attack at this period, and by continuing there for a few years may be perfectly recovered.

Going to a warm climate is not merely avoiding what might be hurtful; it is applying a remedy which has the best chance to prove beneficial.

It may justly be admitted, that the cold and variable temperature of the winters in England is the great source of phthisis in this country, and when the disorder is once formed, greatly contributes to its fatal termination: and that a warm and equable temperature in some measure prevents the formation of the disease, and when it has taken place in only a slight degree, possesses some power in retarding its progress.

In the early stage of consumption, that is to say, when suppuration and ulceration have not yet taken place, it appears from the report of Sir James Macgregor, that the disease was checked by the climate of the Peninsula* among those of the army affected with phthisis; but that when suppuration and ulceration had ensued, it ran even a more rapid progress than in England; and the same remark has been made in regard to the East and West Indies.

Where tubercles have suppurated and are discharging, a voyage to a warm climate generally accelerates the progress of the disease; but the mild and comparatively equable temperature of the ocean is beneficial for those in whom there is only a tendency to phthisis or hæmoptysis. It is indeed a well-established fact, that a warm climate is only advantageous in cases of incipient phthisis. Persons who have passed the first stage of pulmonary consumption, will derive no benefit from a journey to the South of Europe, or elsewhere. Those who labour under confirmed phthisis should never quit their own country. By leaving it, they will lose many comforts; they most probably will be deprived of the attendance of their nearest and dearest friends, as well as that of the medical men in whom they can place confidence, as the English are apt to be prejudiced against foreign physicians; they will, moreover, expose themselves to much anxiety and fatigue,—and all this for the vague hope of recovery or prolonging life: an expectation very seldom, if ever realized. If they remain at home, which they had best do, in all cases of confirmed phthisis, they may live throughout the winter in a regulated temperature.

If the patient's case is one of incipient phthisis only, and his circumstances will admit of removing in due time, that is to say, on the first threatenings of the disorder, from this climate to one in which the temperature is warm during winter, he may do so. The islands of Madeira and Malta, Lisbon, Italy, or the south of France, have been recommended as proper places.

For persons liable to catarrhal or consumptive complaints, the most important properties of the climates of other countries are

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* See his Sketch of the Medical History of the British Armies in the Peninsula of Spain and Portugal, in vol. vi. of the Medico-Chirurgical Transactions.

warmth and equability of temperature, especially in the winter months. The islands of Madeira and Malta present, numerically, a mean temperature for the winter months; but Pisa, Nice, Villa Franca, (very near the latter,) and Hieres, are certainly the most desirable places on the Continent for an invalid.

A female writer* of some celebrity informs us, she is convinced by experience, that the lives of many consumptive patients might be saved were they sent by sea to Leghorn, advised to winter at Pisa, cautioned against travelling much by land, and above all things, interdicted from crossing the Appennines and Alps,—which people very frequently do, in order to spend the summer months in Switzerland, one of the most unequal climates in Europe. She thinks, that in pulmonary complaints, Pisa is entitled to a decided preference over Nice, Massa, Florence, Rome, or Naples, or indeed to any other place in Europe, from the beginning of October till the end of April. She was advised to travel over-land to Italy, and, therefore, she passed over to France. Nice was recommended to her as the best winter climate, and she therefore spent many months in that city: but experience soon convinced her that she might have adopted a more eligible plan; for long journeys over-land on the Continent are to consumptive persons dangerous experiments, owing to the accommodations being so very indifferent that it is scarcely possible for an invalid to sleep at an inn out of a great town without suffering. To consumptive persons and invalids in general, she therefore recommends the going to Italy by sea in a vessel bound to Leghorn, and so wintering at Pisa.

When the patient's circumstances or business will not admit of his removing to a more temperate climate, he must endeavour to pass his winter in some place which is dry and well sheltered from cold bleak winds, where the air is free and pure, and the soil of a gravelly nature. The mild and sheltered vales of Devonshire, but more particularly Sidmouth, Torquay, and Penzance in Cornwall, offer desirable situations of this nature; but the latter may be considered as entitled to a decided preference. It has indeed been thought by some as equal to any situation abroad; and, therefore, the victim to consumption will not find it necessary to flee, an exile from his home and friends, to seek a doubtful advantage in a foreign clime.

From a register of the weather at Penzance by Dr. Forbes,† the mildness and equability of the temperature of that country are evident. He observed that the maximum temperature of July was only 78° of Fahrenheit, the minimum of December only 33°, and the mean range of the barometer, 1.48 inches.

With the enjoyment of a free and pure air, the patient should take, daily, moderate exercise either in a carriage or on horseback,

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* See Stark's Letters, vol. ii. p. 261.

† See Annals of Philosophy for March, 1819.

but more particularly the latter. By taking it in progressive journeys through different parts of the country, in fair and settled weather, the efficacy of the remedy, great as it may be at other times, would be much increased; for in such a tour the mind would find an ample store of amusement, and be diverted from any train of unpleasant thought. The pursuit of some object at the same time might probably add to the effect. All violent exertions, such as dancing, &c., liberties in diet, and going to crowded public places, are most cautiously to be avoided.

If the disease has made considerable progress, and the patient is thereby prevented from exposing himself out of doors during the winter and spring, he must be content to live in chambers subject to very little change from the atmosphere, and heated from 62 to 65 degrees: which temperature will be most suitable. A stove may be employed for the purpose, and a preference should be given to one of porcelain (like the German and Russian stoves,) over one of iron, as a very unpleasant smell is occasioned by the latter. Dr. Buxton* is, however, of opinion, that in the common shop-stove, or ironing-stove used in laundries, we possess all that is necessary for the purpose of the proposed remedy.

Under the principle of amusing the mind, and at the same time of having a desirable end to be obtained, many phthisical patients are yearly sent to the Hot-wells at Bristol. The waters of these wells have long been extolled for their supposed good effect in consumptive cases; but in my humble opinion they are by no means deserving of the credit ascribed to them,—as, during a residence of some time at and near these wells, I cannot charge my memory with a single instance where any person labouring under a confirmed phthisis experienced much relief from their use alone.

That many persons who have been of a phthisical habit have derived benefit from resorting to the Bristol Hot-wells I am ready to admit; but this should not be attributed wholly to the waters. The horse exercise, which is taken daily by such patients, on a fine airy down, where most beautiful views and rich landscapes are presented to the eye on every side; the salubrity of the air; the healthfulness of the situation, and the frequent attendance on the different amusements which are furnished at these wells, and those at Clifton, prove beyond all doubt most powerful auxiliaries. Places of public resort afford relief to the mind of convalescents, and serve to keep it in the same active state that exercise does the body; preventing thereby that indulgence in gloomy reflection, to which the want of cheerful scenes and agreeable company is apt to give rise in those who are in an indifferent state of health.

The opinion which I have here offered on the efficacy of the Bristol Hot-wells' waters, seems however by no means to accord

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* See his Essay on the Use of a regulated Temperature in Winter Cough and Consumption.

with that entertained of them by a gentleman who some time ago published a Dissertation on their chemical and medical properties.* On the subject of pulmonary consumption, he observes, that the utility of a journey to Bristol, undertaken while a cure is yet practicable, is demonstrated by hundreds of examples annually; where the disease is prevented in many, and suspended or mitigated in others. I agree, however, with Dr. Beddoes,† that the fine things which medical men put into their pamphlets about the water of the places where they constantly or occasionally reside, are to be received with a large share or weight of allowance. Nay, I am decidedly of opinion, that at least three-fourths of the cures attributed to all mineral waters, ought rather to be placed to the account of a difference in air, exercise, diet, amusement of the mind, and the regulations productive of greater temperance, than to any salutary or efficacious properties in the waters themselves.

Respecting the composition of the Bristol water, it appears, from Dr. Carrick's experiments, to consist of the following principles; a wine gallon of 231 inches is impregnated with

Muriated magnesia - - - - - -	7¼	grains.
Muriated soda - - - - - - -	4	
Vitriolated soda - - - - - - -	11¼	
Vitriolated lime - - - - - - -	11¾	
Carbonated lime - - - - - - -	13½	
Making together of solid matter	47¾	grains.
Carbonic acid gas - - - - - -	30	cubic inches.
Respirable air - - - - - - -	3	
Making together of gaseous fluids	33	cubic inches.

On the supposed virtues of this water in phthisis, there has indeed prevailed much diversity of opinion, and many have denied that it possesses any peculiar power superior to simple water. Dr. Saunders‡ thinks, that although it is by no means a cure for consumption, still it will be found to alleviate some of the most harassing symptoms in this formidable disease. He observes, it is particularly efficacious in moderating the thirst, the dry burning heat of the hands and feet, the partial night-sweats, and the symptoms that are peculiarly hectical; and thus in the early stages of phthisis it may probably contribute to a re-establishment of health; and even in the latter periods it may considerably relieve, when the prospect of a cure has long been doubtful, if not hopeless.

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* See Dr. Carrick's Dissertation on the Chemical and Medical Properties of the Bristol Hot-wells' Water.

† See his Manual of Health, p. 337.

‡ See his Treatise on Mineral Waters, p. 125.

Short voyages on sea have been much recommended to consumptive persons, under the idea that sailing is of all modes of exercise or conveyance the smoothest and most constant. The good effects produced by sea voyages seem to depend, however, chiefly on the purity of the air, assisted somewhat probably by the occasional vomiting, which persons unaccustomed to be on board of a ship usually experience.

Swinging is another species of exercise much recommended to phthisical patients. The use of what are called dumb-bells might perhaps likewise prove serviceable.

To remove inflammation from the lungs, and prevent the tubercles from proceeding to suppuration, the application of a blister will be highly proper; and that it may be rendered perpetual, it should be shifted from the chest to the side, and from the side to the chest, whenever the discharge ceases to be painful. Issues or a seton are frequently inserted in the side, or between the scapulæ; and in cases of incipient phthisis sometimes produce a good effect. Topical bleedings, by means of leeches and cupping, might likewise be resorted to with advantage in this stage of the disease. Both blisters and topical bleedings will afford considerable relief, where there is a fixed pain in the breast or sides which is increased upon coughing.

Previously to the tubercles becoming much inflamed, perhaps they may be relieved, or be entirely removed, by a solution of the muriate of lime; beginning with a drachm a day, and gradually increasing the dose.

On the recommendation of Dr. Beddoes, factitious airs some years back were employed in the early stage of phthisis, and as auxiliaries, they undoubtedly proved serviceable; but from their virtues having been overrated, and an almost sole dependence placed upon them in many cases, they fell into disrepute, and other remedies have been substituted in a very rapid succession. Oxygen reduced by an addition of hydrogen, and other aërial fluids, with carbonic acid gas, are those which were chiefly used. With these the air of a room may easily be impregnated by means of the apparatus invented by the late Mr. Watt of Birmingham.

Where there is any difficulty in procuring the proper apparatus and materials, so as to prevent the possibility of adopting the most expeditious, or, upon the whole, the most advantageous methods of procuring the aërial fluids, the practitioner will do well in consulting Tiberius Cavallo's Essay* on the Medical Properties of Factitious Airs, in which a substitute is recommended.

The following are his observations on the gases—and they are highly judicious:—

"In the use of oxygen," he says, "we have a singular stimulus, which admits of its being rendered more or less active by dilution with various proportions of common air. In its pure or nearly

* See chapter the first.

pure state, it is a powerful exciter of suspended animation, and when diluted with a considerable quantity of common air, it is a gentle stimulus, which, by invigorating the various parts of the animal body, by communicating firmness to the solids and energy to the fluids, does frequently obliterate the causes of morbid habits.

"The use of azotic gas, and of the various species of hydrogen gas, produces a diminution of the irritability of the animal fibre to any degree; and hence it becomes useful in a variety of those disorders which depend on an increased irritability, such as inflammations, coughs, spasms, &c. In the use of carbonic acid gas we have a powerful antiseptic, and, in certain cases, a solvent of considerable efficacy.

"The use of pure oxygen air is confined to the purpose of exciting the dormant powers of suspended animation, and it is therefore to be administered to children born apparently dead or overlaid; to persons suffocated by drowning, by fumes of charcoal, by foul air, &c., whenever the circumstances of the case may indicate a possibility of recovery.

"Those cases excepted, the respiration of pure or nearly pure oxygen air is almost always attended with unfavourable symptoms, such as a preternatural heat, especially about the region of the lungs; a quickened and feverish pulsation, inflammation, &c. And these symptoms come on after a longer or shorter use of the oxygen air, according to the particular constitution of the experimenter, and the purity of the gas.

"But when the oxygen is diluted with much common air, viz. in the proportion of one to eight, and even as far as one to twenty, it then is a safe and useful remedy, whose principal action consists in giving tone, elasticity, and consistence to the fluid as well as to the solid parts of the body; and of course it promotes all the natural consequences of those effects, viz. it quickens languid circulation, it strengthens the organs of digestion, promotes secretions, invigorates debilitated habits, and assists nature in throwing off bad humours and other lurking causes of diseases."

Our author concludes with the following observations:—

"After a careful consideration of the preceding general and comprehensive prospect of the medicinal use and efficacy of the aërial fluids, we may easily regulate the measure of our hopes by the standard of reason and experience. The idea of finding in them a remedy capable of curing consumptions in their various stages must be laid aside, and the hope of healing all sorts of internal ulcers will naturally vanish. A use of reduced atmosphere does undoubtedly diminish the irritability of the fibre, and a diminution of irritability favours the healing of certain ulcers, but by no means of them all; nay, in some cases it will even produce the contrary effect. The use of oxygen air has been found advantageous in many of those disorders that are called nervous,

and it has undoubtedly strengthened and invigorated debilitated or emaciated habits; but it would be absurd to expect that it should prove beneficial in all cases of emaciation and debility, since those visible effects are often produced by causes that may be rather fomented than checked by the use of oxygen air."

The only remark I have to add to these judicious observations, now fully established by the repeated trials of others, is, that the confidence placed by certain practitioners in the efficacy of artificial atmospheres seems entirely to be done away.

The vapour of spiritus ætheris sulphurici dropped into warm water, has, in some cases of phthisis pulmonalis, been inhaled with considerable advantage to the patient.

Earth-bathing and stabling with cows, have been recommended by Dr. Beddoes in cases of incipient phthisis: having had no experience of these remedies, I must beg leave to pass them over, it being sufficient that I have mentioned them. The former of these, we are given to understand by Van Swieten, in his Commentaries of Boerhaave, is much adopted in Granada, Andalusia, and other parts of Spain, in the cure of phthisis pulmonalis; and was first used in this country by the late well-known empiric Dr. Graham.

One of the latest remedies which has been introduced into practice for the cure of phthisis, is the digitalis purpurea: to speak properly, it is however rather the revival of an old remedy long laid aside than a new one. Concerning the virtues and mode of operation of this medicine, a variety of opinions have been entertained; some attributing to it the power of diminishing secretion, and of exciting the action of the absorbents; and others again looking upon it as only useful from the power it possesses of lessening the action of the heart and arteries. Foxglove has indeed been generally considered as a direct sedative; and by this power, producing a rapid diminution in the frequency of arterial pulsation. A modern writer* contends, however, that it is a powerful stimulant; that it increases the strength and frequency of the pulse, and if continued sufficiently long, produces flushed face, headach, hot skin, restlessness, and other symptoms of febrile action. These are effects which indeed we have never before heard attributed to this drug, being diametrically opposite to what they are by all others believed to be.

The chief advocates for foxglove† are men of considerable eminence in their profession, and their report is certainly highly in its favour. They seem, however, to be too confident of having discovered a specific (if I may be allowed the term) for this dreadful disease; and until it is determined that the digitalis alone, and not conjointly with other medicines, has uniformly cured pulmonary consumption, and that it produces effects on the human system

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* See Dr. James Saunders on Pulmonary Consumption.

† Dr. Fowler of Stafford, Dr. Drake, Dr. Beddoes, Dr. Mossman.

different from all others of the same class, we are by no means authorized to consider it in so very favourable a light.

Dr. Beddoes, in his Essay on Consumptions, after having informed us that his own experience has fully verified the observations of the two first gentlemen mentioned in the note referred to, uses the following forcible words :—

"I daily see many patients in pulmonary consumption advancing towards recovery with so firm a pace, that I hope consumption will henceforward as regularly be cured by the foxglove, as ague by the Peruvian bark. Could we obtain a single auxiliary for foxglove, such as we have in many instances for the bark, I should expect that not one case in five would terminate as ninety-nine in a hundred have hitherto terminated. But I believe a majority of cases will yield to simple foxglove. It is evident that no new cases need be suffered to advance beyond the first stage, without the application of this medicine, and few into it."

Dr. Drake speaks of it thus :* "It has for several years been given in pulmonary hæmorrhage with effect, and certainly will continue to be with the intelligent, whatever may be the result of its trial in phthisis. I am happy, however, to say, that the success which has hitherto attended the exhibition of the digitalis in phthisis has been very considerable ; several patients, in its confirmed state, have been cured by this remedy ; almost all have been relieved : life has even been protracted by it ; and when death has taken place, whilst the system was under its influence, it has been free from pain or struggle ; my expectations have been answered, and Dr. Fowler, I understand, from further trials, is fixed in his former favourable opinion."

Dr. Mossman says,† "I have prescribed the digitalis very extensively for upwards of twelve months, and during the last six of that period I have had very ample experience of its powers. I am now fully persuaded, that by a judicious management of the plant, variously combined, I can obviate pneumonic inflammation with as much certainty as I can arrest the progress of an intermittent fever by means of the bark of cinchona. Again, I am persuaded, that if pulmonary consumption be divided into four stages, the digitalis will very certainly cure the first three, and as certainly alleviate the distressing symptoms of the last."

In the primary stages of the complaint, Dr. Mossman is of opinion that this remedy approximates to a specific. He thinks that it possesses in itself‡ a power directly sedative ; and that the application of this power, by lessening the irritability of the muscular fibre, will explain its salutary operation in the cure of pulmonary consumption.

From the observations of all these gentlemen, as well as from

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* See Medical and Physical Journal, vol. ii. p. 418.
† See his Essay on Glandular Consumption.
‡ Ibid. vol. iv. p. 309.

those of other physicians,* the digitalis must certainly be admitted to be a very powerful remedy in phthisis; and though it is by no means to be regarded as a specific, still it must be allowed to have procured, in many instances, beneficial effects.

In its early stage, when the powers of the system are not broken down, it promises to be productive of very essential service, by moderating the pulse, and by diminishing the hectic fever—the most distressing of all the symptoms, and that which seems to hurry on the patient to a fatal termination. After the purulent stage is completely formed, it has appeared to me, however, not to produce any considerable or permanent good effect; but even in this stage of phthisis it has been thought by some physicians to alleviate the sufferings of the patient.

It does not seem that any evil of magnitude can arise from its use in tubercular consumption, if properly exhibited; that is to say, if given in moderate doses about thrice a day, and increased in a gradual manner until it produces a sensible effect on the system.

The most unpleasant symptoms consequent on a liberal and long-continued use of this medicine, are vertigo, nausea, and sickness. In one case where the stomach and head were soon disordered by even a small dose, we are informed by Dr. Drake,† that a little lemon-juice produced an immediate good effect, removing both the sickness and vertigo, and enabling him to throw in a larger quantity of the tincture with ease and safety. A few drops of tinct. opii with each dose of tincture of digitalis, he mentions, will sometimes prevent the rejection of the latter from the stomach; but he has not found it very effectual in removing the cessation of languor, or the affection of the head.

The preparation of the digitalis used by the late Dr. Fowler, of Stafford, is a decoction;‡ of which he directed his patients to take half an ounce, twice, thrice, and, in a few instances, four times in

* See Dr. Kinglake's Remarks on the Effects of Digitalis, vol. iii. p. 120, of the Medical and Physical Journal.

† See Medical and Physical Journal, vol. ii. p. 419.

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‡ 1. ℞ Fol. Digital. Purpur. Recent. ℥j
Coque ex
Aq. Puræ, Oj. ad Colat. ℥vijss. et adde

Tinct. Cardamom. f. ℥ss. M.

Vel,

2. ℞ Fol. Digitalis Purp. Siccat. ℥j.

Infunde in Aq. Pur. Bullient. f. ℥viij. et post horam cola.
ft. Infusum. Dos. f. ℥ss. ad f. ℥vj.

‡ 1. Take Fresh Leaves of Purple Foxglove, two ounces.
Pure Water, one pint.

Boil it down to seven ounces and a half.
Strain off the liquor, and add
Tincture of Cardamoms, half an ounce.
Mix them.

Or,

2. Take Dry Foxglove Leaves, one drachm.
Boiling Water, eight ounces.
Infuse them for an hour, then strain off the liquor. The dose of this may be from half an ounce to six drachms.

the twenty-four hours. That used by Dr. Drake was the saturated tincture, in the proportion of five ounces of proof spirit to one ounce of the leaves coarsely powdered, without any dilution of the colour or diminution of strength or taste. Of this saturated tincture he at first gave his patient from fifteen to twenty drops twice a day, which in some cases he gradually increased to ninety or a hundred drops with safety, even in patients gradually debilitated, before either sickness or irregularity of the circulation took place.

Dr. M'Lean, of Sudbury, in Suffolk, is another gentleman who has favoured us with his sentiments on the foxglove; and although he does not speak of it in such high terms as those of whom I have made mention in the preceding pages, and allows its powers to be limited even in the very early stages, still he is ready to acknowledge that he found it a valuable remedy in consumption.* He says, "It will sometimes cure when the most approved remedies fail. When of itself it is insufficient to subdue the disease, it will prove a valuable auxiliary to other means. It has always with me quieted and soothed the sufferings of the patient, more or less; and where it ultimately failed, it lengthened the duration of life, and smoothed the avenues to death." He goes on with observing, "This is all I apprehend it will be found capable of performing; but this is doing a great deal. Those who expect wonders from it, or that it will *in general* cure consumption, will be disappointed."

The preparation of the digitalis, recommended and used by Dr. M'Lean, is that of the tincture made according to the formulæ† here advised; but he gives the preference to the last, as having the plant in its perfect state. He begins with from ten to fifteen drops three times a day, increasing two drops every second day, until the habit feels its influence. He then desists, and afterwards diminishes in the same gradual manner, or augments the dose, according to the effect. By these means, he observes, the body may, with the greatest safety, be kept under its influence for weeks, and even months. From Dr. M'Lean's report it appears, however, that he never was able to exceed a greater dose than thirty drops, repeated three times a day.

* See Medical and Physical Journal, vol. ii. p. 117.

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† 3. ℞ Folior. Digital. Purp. exsic. ℥j.

Spirit. Ten. f. ℥viij. M.
Digere leni calore per dies septem, dein cola.

Vel,

4. ℞ Folior. Digital. Purpur. recent. ℥iv.

Spir. Rectif. f. ℥v. M.
Digere per dies septem leni calore, dein cola.

† 3. Take dry Leaves of Purple Foxglove, one ounce.
Proof Spirit, eight ounces.
Let them stand in a warm place for seven days, then strain off the liquor.

Or,

4. Take fresh Leaves of Purple Foxglove, four ounces.
Rectified Spirit, five ounces.
Let them stand for seven days in a gentle warmth, then strain off the liquor.

With respect to the supposed mode of action of the digitalis, instead of allowing, with Doctors Darwin, Fowler, and Drake, that its good effects depend always upon its power of diminishing secretion, and promoting pulmonary absorption, he observes, that it is equally, and indeed more efficacious in cases where there is no increase of mucus or pus. He attributes the good effects of the remedy in question to its power of correcting the diseased condition of the whole frame, and the train of morbid phenomena resulting from it. His words are: "It is to these I have been disposed to attribute, in a great degree, its salutary effects in this deplorable malady. If it frequently possesses such a control over the heart as to reduce its contractions from 120, and even 140, to fifty in a minute; if it allays, as it does in a most extraordinary manner, the cough and irritation of the lungs, and indeed of every part, the advantages thence resulting will be incalculable. The vessels of the diseased lungs will be placed in a condition of secreting bland healthy fluids; every organ in a state of performing its healthy functions; and thus the unison and harmony which constitute the healthy standard will be established throughout the body."

In opposition to the theories of Doctors Drake and Fowler, and to that of Dr. M'Lean, with respect to the mode of action of the digitalis, there are some practitioners who allow of its having no other powers than those of a sedative nature. This opinion seems by no means to be well founded. The modus operandi of this plant does not seem however to be clearly understood as yet.

Let its powers depend upon what they may, certain it is that its success is proportioned to its early exhibition; and that therefore in every case where the disease arises in a phthisical habit, or is clearly marked, it ought to be had recourse to without any further loss of time. As the saturated tincture recommended by Dr. M'Lean appears to be its best preparation, we should give it the preference. Indeed the College of Physicians have nearly adopted it in their new Pharmacopœia lately published.

In administering foxglove, it will be necessary to attend to the state of the pulse under different positions of the body; for it appears by the report of some physicians, that there is a considerable difference of its velocity in the erect and recumbent postures. A case is recorded in the third volume of the Edinburgh Medical Journal, page 271, in which, after taking this medicine, the pulse was not lessened in frequency when the patient stood erect, being upwards of a hundred. When he sat down it fell considerably; and when lying on his back it fell much more: when sitting it was reduced to seventy-five, and when lying to forty. The experiment was repeated many times, and always with the same effect. The like singularity is noticed by Dr. Hamilton in his Treatise on Digitalis.

Hemlock is a remedy which has been much recommended in glandular affections. As a narcotic it may be useful in some

cases of tubercular consumption, but opium most likely will answer this purpose better. It may be given, conjoined with myrrh, in the form of pills,* when we wish to make trial of it.

Muriate of barytes is another remedy which has been much recommended by some physicians in incipient phthisis, as well as scrofula. It is best given in the form of the solutio muriatis barytæ, at first in doses of five or six drops, which may afterwards be increased to twenty, twenty-five, or thirty, twice or thrice a-day.

The hydriodate of potass in solution with water, (say 36 grains of the former to one ounce of the latter,) has been employed with success in some cases of tubercular consumption by Dr Baron.† It will be best to begin with eight drops twice a day, and so be continued without intermission for three weeks or so: when it may be left off for a little time, and be resumed, then increasing the quantity to ten or twelve drops.

In that variety of the disease which appears to be occasioned by an enlarged and indurated state of the abdominal viscera, or the lymphatic glands of the mesentery, we are told by Dr. Wilson‡ that he found mercury a valuable remedy, and that he has seen the patient saved by it even at an advanced stage. Mercury is, indeed, a remedy which has been much recommended, and sometimes employed in the early stages of phthisis pulmonalis by a few physicians in America, but more particularly by Dr. Rush. I think, however, it promises no relief except in the cases Dr. Wilson used it. In all others it may be more likely to aggravate the disease than amend it.

In the early stage of phthisis, the exhibition of an emetic every second or third day is usually attended with a very happy effect, and seems indeed to be one of the most powerful remedies we know of. As such, it should never be neglected, with an exception to pregnant women. From the cupri sulphas having been found to excite vomiting readily and easily, without relaxing the stomach, irritating the intestines, or greatly fatiguing the patient, it has been more generally used in phthisical cases than any other medicine of the same class. The dose is from three grains to ten or fifteen, in proportion to the age of the patient, dissolved in two or three ounces of water. A vomiting is excited soon after it is received into the stomach, on which the patient may drink a pint of water.

† See his Illustration of Tuberculous Diseases.
‡ ——— Treatise on Febrile Diseases, vol. iv.

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* 5. ℞ Extract. Conii,
Gum. Myrrh. pulv. āā ℥ss.
Mucilag. Gum. Acac. q. s. M. ft. Massa, in pilulas viginti distribuenda, quarum duas sumat bis terve in die.

* 5. Take Extract of Hemlock,
Gum Myrrh, in powder, of each half a drachm.
Mucilage of Gum Acacia, a sufficiency to form the mass, to be divided into twenty pills, of which take two twice or thrice a day.

Dr. Marryat* seems to have been one of the first who recommended the employment of the cupri sulphas as an emetic in phthisical cases. He advised it to be combined with tartarized antimony in the proportion of seven grains of each, which he directs to be divided into three powders, one of which is to be given twice or thrice a week. When any diarrhœa attends, he gives one grain of the cupri sulphas with five grains of ipecacuanha. During the operation of the medicine he advises nothing to be drank, for which reason he calls it the dry vomit.

Dr. Senter, in his Remarks† on Phthisis Pulmonalis, assures us, that he has restored more persons labouring under hectic fever from glandular suppuration, by vomiting every second or third day with the cupri sulphas, and giving in the intervals as much as the stomach would bear of Dr. Griffith's myrrh mixture (hereafter to be mentioned,) than by all other methods he has ever read of or tried. He looks upon the sulphate of copper to be one of the most safe and efficacious emetics joined with ipecacuanha, that the materia medica furnishes us with; and advises from seven to ten grains of each, made up into pills, to be taken in the morning fasting, without drinking any thing afterwards.

To the good effects of the mode of treatment pursued by Dr. Senter, I can bear ample testimony, having adopted it in many cases of incipient phthisis with infinite advantage.

As the cough often proves troublesome in the first stage of the disease, as well as in the last, it may be found necessary to make use of some pectoral.‡ In such cases, the patient, besides using

* See his Therapeutics.
† See Transactions of the College of Physicians of Philadelphia, vol. i. part i.

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‡ 6. ℞ Misturæ Ammon. f. ℥viss.

Acet. Scillæ, f. ℥ij.
Syrup. Tolutan. f. ℥iij.
Tinct. Camphor. Comp. f. ℥ij. M.

ft. Mistura, cujus sumat cochl. j. larg. subinde aut tusse urgenti.

Vel,

7. ℞ Misturæ Amygdal. ℥vj.
Oxymel. Scillæ, ℥iij.
Tinct. Camph. Compos. ℥ij.

—— Digitalis ♏ xx. M.

Sumat paululum subinde.

Vel,

8. ℞ Cetacei, ℥ij.
Vitel. Ovi, q. s. ad solut. et adde

Aq. Pulegii, f. ℥v.

‡ 6. Take Mixture of Ammoniac, six ounces and a half.
Vinegar of Squill, two drachms.
Syrup of Tolu, three drachms.
Compound Tincture of Camphor, two drachms.

Of this mixture, let the patient take a large spoonful whenever the cough is troublesome.

Or,

7. Take Almond Mixture, six ounces.
Oxymel of Squill, three drachms.
Compound Tincture of Camphor, two drachms.
Tincture of Foxglove, thirty drops.

Mix them, and take a mouthful from time to time.

Or,

8. Take Spermaceti, two drachms.
Yolk of Egg, a sufficiency for solution.

Then add
Pennyroyal Water, five ounces.

these medicines as necessity may render needful, should take for ordinary drink what is here* recommended. In this stage of the disease opiates would be likely to prove prejudicial, and we should resort to them only in those cases where the rest at night is much disturbed. The extractum papaveris in doses of five grains or more should be preferred to opium. The digitalis, by allaying the irritation of the lungs, in consequence of its retarding the circulation through them, may be of much advantage in appeasing the cough.

Hyoscyamus and the humulus lupulus have been employed with advantage where opium cannot be administered: but we are told by Dr. Duncan senior,† that of all the substitutes for opium which he had ever used in practice, he had found none of so much benefit in phthisis particularly, as the preparations formed from the inspissated juice of the common garden lettuce, or lactuca sativa of Linnæus. Dr. Duncan thinks favourably of the effect of inhaling the vapour of sulphuric æther in which the dried leaves of conium maculatum have been macerated; and he recommends it as particularly relieving the cough and dyspnœa, and promoting expectoration.

The hydro-cyanic (prussic) acid has lately been given in phthisis. The medicine was first introduced into practice by the Italians, under the form of distilled laurel water, and has been given by them and the physicians of other nations in various affections known to depend on inflammatory excitement of some organ, as well as on some species of more evident chronic inflammation. It has been considered by Dr. Granville‡ to be a valuable and powerful remedy in checking the progress of pulmonary consumption, when in its incipient state. We are told by him that it is eminently sedative, that it appears to exert its influence on the nervous system, that it gradually diminishes all irritability, checks too rapid circulation, and calms many of the symptoms of fever. If a dry cough be present, it is said to promote expectoration in the first instance, and subsequently to stop the cough itself. In hectic fevers, he tells us, it affords ease, lowers the pulse, diminishes the force and number of the paroxysms, works a favourable change in the action of the lungs and their circulation, while the

† See his Observations on Pulmonary Consumption.

‡ See his Observations on the Internal Use of Prussic Acid in Pulmonary and some other Diseases.

Potassæ Nitrat. ℈j.
Tinct. Digitalis, ℥ xxvij.
Syrup. Tolutan. f. ℥ss. M.

* 9. ℞ Decoct. Hordei, Oij.
Gum. Acaciæ, ℥iij.
Syrup. Limon. f. ℥ss. M.

Pro potu ordinario.

Nitrate of Potass, one scruple.
Tincture of Foxglove, forty drops.
Syrup of Tolu, half an ounce.
Mix them.

* 9. Take Decoction of Barley, two pints.
Gum Acacia, three drachms.
Syrup of Lemons, one ounce and a half.
Mix them for ordinary drink.

morbid heat of the skin and the circular flush of the cheeks gradually disappear. The night sweats are also said to be soon suspended.

In consequence of the powers attributed to it by Dr. Granville, I was induced to make trial of it in several cases, but with no other advantage than that of reducing the pulse very considerably indeed. It has been recommended to begin with the dose of two drops, repeating this about four times a day, and so gradually increasing it to three or four, and may be administered agreeable to the formulæ below.* In all prescriptions having this acid as one of the ingredients, it is indispensably necessary to use no other than distilled water, as decomposition of the salts contained in common water, or of the acid itself, will otherwise take place; Prussic acid, although contained in small quantity in bitter almonds, the kernels of apricots, and several plums, the leaves of the peach, nectarines, and lauro-cerasus, is obtained from animal substances by a chemical process recommended by Vauquelin. The symptoms which attend an over-dose of this acid, and the proper remedies to counteract it, are noticed under the head of Animal Poisons.

The lichen Islandicus is a favourite remedy with the continental physicians, and is daily employed by them in the routine of phthisical cases. The most usual form of exhibiting it is in that of a decoction with milk; or, when this disagrees with the stomach, in water. It is not used, however, indiscriminately in every species of phthisis, nor in every stage of that disorder. It is chiefly recommended in those instances where the cough is attended with purulent expectoration; in cases preceded by, or accompanied with, hæmoptysis; in incipient phthisis, where from relaxation there is an increased discharge of mucus from the bronchia; in the sequelæ of measles attended with a quick small pulse, pain of the breast, emaciation, violent cough, and purulent expectoration. Of late, the lichen Islandicus has become a fashionable remedy likewise among our own physicians, and I have myself prescribed it in several cases of phthisis, but without any evident beneficial effect. It seems, indeed, better calculated for an article of diet than medicine.

Such are the means which should be had recourse to during the first stage of phthisis. In the second and latter stages we are to

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* 10. ℞ Misturæ Amygdal. ℥ix.
Acid. Hydro-cyanic. gutt. ij.
Syrup. Tolutan. ℥i. M.
ft. Haustus.

Vel,

11. ℞ Aq. Distillatæ aut Infus. Rosæ, ℥x.
Acid. Hydro-cyanic. gutt. ij.
Syrup. Papav. ℥i. M.

* 10. Take Almond Mixture, nine drachms.
Prussic Acid, two drops.
Syrup of Tolu, one drachm.
Mix them for a draught.

Or,

11. Take Distilled Water, or Infusion of Roses, ten drachms.
Prussic Acid, two drops.
Syrup of Poppies, one drachm.
Mix them.

counteract, if possible, the effects of the absorbed matter; to mitigate the most distressing symptoms, such as the cough, diarrhœa, and colliquative sweats; and lastly, to put the body into as good general health as possible, by air, moderate exercise, and a proper course of mild nutritive food.

No antidote against the poison which especially operates here having been found out, and it appearing that too great a degree of inflammation may have a share in preventing the ulcer from healing, and in urging on its fatal consequences; it has been proposed to employ means for moderating the inflammation in this stage of the disease, as well as in the first. With this view, small bleedings, frequently repeated, have been advised by some physicians. Drawing off blood, when this disease has arrived at the stage of ulceration, is, in my opinion, exhausting the vital stream very unnecessarily; it is adding to debility, and must therefore be very improper. The same reasoning will hold good against a use of purgatives.

When we want to lessen the action of the heart and arteries, from the pulse being very frequent, and the patient much troubled with flushing heats, in consequence of hectic fever, we should employ the digitalis, instead of having recourse to such debilitating means; this having been found capable, as has already been observed, of reducing the pulse from 120, and even 140 strokes in a minute, to something below the natural standard.

Dr. Bourne, of Oxford, has published some cases of pulmonary consumption, in which he made trial of the uva ursi; and the dose in which he mostly exhibited it to his patients, was from eight to fifteen grains of the powder three times a day. He is of opinion that it has a very sensible effect in diminishing the hectic fever, and in abating the increased frequency of the pulse dependent thereon. It appears that he was first induced to make use of it in phthisis from having remarked its good effects in a disease of the urinary organs, attended with a discharge of muco-purulent matter along with the urine, and accompanied with all the usual characteristics of hectic fever. The uva ursi is possessed of considerable astringency, and to the taste is slightly bitter; but neither its sensible properties nor its immediate effects on the system point it out as a medicine of great activity, particularly in phthisis pulmonalis.

In the second stage of the disease, the employment of emetics must be duly persisted in, every second or third morning, in the manner advised during the first stage.

As detergents, different balsamics have been much used in the ulcerated stage of the disease. Balsam of copaiba, in the dose of from twenty to thirty drops twice or thrice a day, may be tried. Myrrh is, however, the medicine which is employed with the greatest success in those cases of hectic fever which are unattended by any great degree of heat or thirst, and which do not

show manifest signs of inflammation. The preparation* used by the late Dr. Moses Griffiths seems to be preferable to all others. If at any time it should be thought too heating, the spirituous water may be omitted, as the solution may be made without it: but it is a doubt if it will agree so well with the stomach of patients in general.

The myrrh may gradually be increased to seventeen or eighteen grains for a dose, the potassæ subcarbonas to ten, and the ferri sulphas to four. But it is always best to begin with small doses, and as the symptoms abate, to give two draughts a day, containing eighteen or twenty grains of myrrh, twelve of the potassæ, and five or six of the ferri sulphas, which is the largest dose that should be taken. This medicine, although a little nauseous at first, is nevertheless seldom rejected by the stomach, or excites any kind of disturbance in the habit afterwards.

Where hectic heats and flushings prevail in a high degree, and the pulse is very frequent, it probably might be most advisable to omit the last articles entirely. The Mistura Ferri Composita of the last London Pharmacopœia, is pretty similar to Dr. Griffiths' medicine.

Dr. Beddoes has expressed a wish that we could obtain a single auxiliary to foxglove, as that then he should expect that not one case in five would terminate as ninety-nine in a hundred have hitherto done. I would propose this myrrh mixture of Dr. Griffiths', and vomiting twice a week with the cupri sulphas, as mentioned in the preceding pages. A proper dose of the tincture of digitalis may be added to each of the myrrh draughts, and so be given together. This plan of proceeding I have adopted in several cases, and with much seeming advantage.

Should the mixture not sit easy on the stomach, or be objected to on account of its nauseous taste, we may then form the myrrh and other ingredients into pills,† and give the digitalis in about an ounce of the infusion of quassia or cascarilla.

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* 12. ℞ Myrrhæ, ℥j. Solve terendo in mortario cum
Spirit. Pimentæ, f. ℥vj.
Aquæ Distillat. f. ℥vjss.

Dein adde
Potassæ Subcarbon. ℥ss.

Ferri Sulphatis, gr. xij.
Syrup. f. ℥ij. M.
ft. Mistura, in haustus quatuor distribuenda, quorum unum capiat mane, horâ quintâ post meridiem, et horâ decubitûs.

† 13. ℞ Myrrh. Pulv. ℥ij.
Ferri Sulphat. ℈j.
Potassæ Subcarbon. ℥j.
Extract. Gentian. ℥jss.

* 12. Dissolve of Myrrh, one drachm, in mortar, with
Spirit of Pimenta, six drachms.
Distilled Water, six ounces and a half.
Then add
Subcarbonate of Potass, half a drachm.
Sulphate of Iron, twelve grains.
Syrup, two drachms.
Mix them, and divide the whole into four draughts, of which one is to be taken every morning, another at five in the evening, and one at bedtime.

† 13. Take Myrrh in powder, two drachms.
Sulphate of Iron, one scruple.
Subcarbonate of Potass, one drachm.
Extract of Gentian, one drachm and a half.

The cinchona bark has been employed in the ulcerated stage of phthisis; but if ever it proves serviceable, it can only be when the morning remissions of the fever are considerable, and the noon exacerbations well marked. In other cases it may be likely to prove prejudicial.

The reason why pulmonary ulcers are prevented from healing, is their being constantly exposed to the air. It is remarkable that matter produced by suppuration may be confined in the body many weeks, or even months, without producing hectic fever; but as soon as the wound is opened, so as to admit air to the surface of the ulcer, a hectic fever very quickly supervenes.

The suckling of children longer than is consistent with the mother's ability, is sometimes a cause of atrophy or pulmonary consumption; but more particularly among the lower class of females who are of a tender and delicate constitution. In such cases the cinchona bark given early in moderate doses, and merely as a tonic, is sometimes attended with a good effect.

Where a disposition to consumption arises in consequence of any enfeebling evacuation, such as a considerable abscess, fluor albus, or the like, without any inflammation of the lungs having yet taken place, cinchona will likewise prove serviceable, and may be given as advised below.* After inflammation has come on, or ulceration has commenced, it would not fail to prove injurious, by increasing the cough and tightness and oppression of breathing.

To counteract the effects of absorption, vegetable acids, such as oranges, and other fruits yielding an acid but not acrid juice, have been much recommended. When they do not affect the bowels, they may be given freely with the powder of sarsaparilla. Fresh subacid fruits, although supposed to be usually laxative, are often useful in the diarrhœa of hectics, by their antiseptic quality.

When the diarrhœa of hectic is accompanied with pain, and resists the action of astringents and anodynes, small doses of the submuriate of mercury have been found useful.

In this stage of the disease, as well as in the incipient, we are to obviate inflammation, and divert the matter, if possible, by means of blisters, issues, or a seton.

Syrup. Simpl. q. s. M.
ft. Massa, in pilulas lxx. distribuenda, quarum sumat iij.—iv. ter in die.

* 14. ℞ Potassæ Subcarbon. ℈ij.
Succ. Lemon. f. ℥j.
Decoct. Cinchon. f. ℥v. M.
ft. Mistura, cujus capiat cochl. ij. bis terve in die.

Vel,

15. ℞ Decoct. Cinchon. f. ℥v.
Liquor. Ammon. Acetat. f. ℥j. M.
ft. Mistura.

Syrup, a sufficiency to form the mass, which is to be divided into seventy pills, whereof three or four are to be taken thrice a day.

* 14. Take Subcarbonate of Potass, two scruples.
Juice of Lemons, one ounce.
Decoction of Peruvian Bark, five ounces.
Of this mixture, let the patient take two table-spoonsful twice or thrice a day.

Or,

15. Take decoction of Bark, five ounces.
Solution of Acetate of Ammonia, one ounce.
Mix them.

To palliate the cough, which is very apt to prove troublesome, and to assist the expectoration, we may have recourse to demulcents, as before advised. If the patient's rest is much disturbed by night, we may employ opiates; and although they are supposed to increase the phlogistic diathesis, and in some degree to check the expectoration, still they amply compensate for these by the ease and sleep they procure.

In the tubercular or true scrofulous phthisis, Sir A. Crichton, of Petersburgh, has seen very great benefit derived from a use of tar fumigation. He found that it heals the ulcers and subdues the inflammation of the tubercles; but where there are large abscesses, or vomicæ, in sanguineous habits, and in cases of suppuration succeeding active hæmorrhages, accompanied with fever, in young persons, little or no advantage was derived from the remedy. It is also of importance to know that the use of the fumigations should not be continued after the cough, expectoration, and hectic symptoms are greatly subdued, and the patients should not again expose themselves hastily to a cold air.

The simplest and best manner of filling a room with the vapour from tar, is to place the vessel containing it over a spirit lamp, taking care that it boils slowly, and does not burn. The vessel should be well cleansed every day, and the fumigation be repeated every three hours. Some of the subcarbonate of potass (in the proportion of one ounce to the pound of tar) is to be added, in order that the pyroligneous acid, as Sir A. C. terms it, (perhaps more properly the empyreumatic acetic acid,) may be destroyed.

With respect to the treatment of phthisis by bituminous vapour, the subject is not altogether new, as similar good effects have resulted from the vapour of melted resin; a case of which nature, that occurred in the year 1771, is reported in the 53d No. of the London Medical Repository, page 400.

In slow hectic fever, attended with frequent flushings and profuse night-sweats, and with much coughing and fetid purulent expectoration, Seltzer water will often in a high degree check the violence of perspiration, diminish the discharge from the lungs, and correct its fetor; and under the operation of this medicine the patient will for a time be able to gain quieter nights, and a better appetite. Seltzer water mixes well with milk, and will not soon coagulate it; which mixture has been strongly recommended in cases of hectic fever with expectoration. In very irritable habits it may be highly necessary to dilute the water in this way, as in its simple state it might prove too powerful.

When the sweats are profuse, the infusum rosæ compos. with a sufficient quantity of diluted sulphuric acid, will be a good medicine to check them, and may answer instead of Seltzer water. The nitrate of silver in doses of an eighth or fourth of a grain twice or thrice a day, has been administered with a happy effect in some cases of profuse sweating, accompanied by purulent expectoration. The acetate of lead, when joined with opium, also re-

strains, in a very powerful manner, the morning perspiration, which wastes and harasses the patient.

When a diarrhœa arises, it is to be stopped by astringents combined with opium, as recommended under that head. For common drink, the patient may take the mistura cornu usti, and arrow-root. By the consent between the intestines and skin, twenty grains of Armenian bole given on going to bed to hectic patients, will frequently check their tendency to sweat as well as to purge, and the more certainly if joined with one grain of opium.

Where a spitting of blood arises in persons labouring under phthisis, the internal use of the acetate of lead conjoined with opium, together with the other means advised under the head of Hæmoptysis, must be resorted to.

The aphthous sores in the mouth which frequently arise in the latter stage of phthisis, are to be cleansed by washing or rinsing the fauces often with an infusion of cinchona, having a little borax dissolved in it.—See Cachexia Aphthosa.

The strength is to be supported by food of a light nature, but which is at the same time highly nutritive; and the different exercises, such as sailing and riding in a carriage or on horseback, but more particularly the latter, should be taken daily in fine weather. When the inflammatory diathesis is subdued, chalybeates, combined with myrrh and the subcarbonate of potass, may be given with much advantage. The liquor calcis will be a good menstruum for dissolving the myrrh.

Should we be so fortunate as to subdue the disease by the means which have been pointed out, it will be indispensably necessary for the patient to persevere in employing the regimen recommended in the treatment of this complaint, for a considerable length of time after every symptom has disappeared; and he should return to his former manner of living with the utmost caution.

Some practitioners, from considering pulmonary consumption as entirely of a scrofulous nature, disapprove highly of the antiphlogistic plan, by bleeding and a spare diet even in the first stage of the disease. Instead of these, they recommend a nutritious diet, consisting of shell-fish and animal food; the use of conium and sarsa in powder as medicines; warmth in the dress, by wearing flannel next to the skin, and at the same time heating the patient's room to the West India point, when he cannot remove to a warmer climate; the application of blisters, and frequent smart riding on horseback by way of exercise.

With regard to the remedies usually employed in the treatment of phthisis, Dr. Ferriar has observed that the digitalis, with the ferri sulphas, myrrh, cinchona, and other tonics, may be most proper in those cases of consumption which arise from scrofula; while the digitalis with opium, mucilaginous medicines, and diuretics, may be opposed to the florid consumption.

CACHEXIA AFRICANA, OR NEGRO CACHEXY.

THIS disease, known by the name of mal d'estomac among the French, and by that of dirt-eating in our West India colonies, is frequently to be met with among negroes, but more particularly those imported from Africa. Mons. Sonnini makes mention, in his Travels through Egypt, that a propensity for eating earth is a disease frequently to be met with likewise among the Egyptians. Between it and chlorosis there is, in many respects, a great similarity; but they differ in this circumstance, that the latter only affects females, and that principally about the age at which menstruation ought to commence; whereas the former affects males as well as females, and is often to be met with in children of six or seven years old, as I have seen happen in various instances.

Cachexia Africana evidently arises from a want of due energy or vigour in the system, induced by various debilitating causes, as grief and despondency, occasioned by their being separated from their families and friends, and reduced to a state of bondage; by poor diet, hard labour, and harsh treatment. With some the disease is, however, constitutional, and proceeds from general relaxation, a vitiated state of the stomach, and bad digestion. Negroes imported from the coast of Africa, who are of an inactive indolent habit, and children of lax fibres, and who have been badly nursed and afterwards neglected, are most liable to its attacks.

Nostalgia, in which there prevails an unaccountable desire of returning to one's own country, is a disease somewhat similar to the negro cachexy. It is derived from the Greek words νοστος, return, and αλγος, grief, because it is only cured by returning to the paternal roof. The French,* among whom the disease is denominated mal du pays, as also the Swiss, are said to be particularly liable to it; and the latter, when taken into foreign service, very frequently desert from this cause. Its effects on the Africans are more violent, and not unfrequently impel them to dreadful acts of suicide. Sometimes it plunges them into deep and incurable melancholy, which induces the unhappy sufferers to end a miserable existence by a more tedious, though equally certain method, that of dirt-eating.

Cachexia Africana shows itself by a fondness for solitude, and an indulgence in grief and despondency, together with the loss of appetite, constant pain in the stomach, difficulty of breathing upon the least bodily exertion, paleness of the face and palms of the hands, whiteness of the tongue, with an appearance like stains of ink upon it, paleness of the lips, drowsiness, inactivity, unwillingness to attempt and inability to perform motion, and general debility. The tunica adnata is of a glassy whiteness, the skin of an olive complexion and cold to the touch; the eyelids, face, and

* See Recollections and Essays, by F. A. De Chateaubriand, vol. ii. p. 133.

extremities, show evident signs of an extravasation of water in their cellular membrane; and the unhappy sufferer can only breathe in an erect posture, from water being likewise collected in the chest and cavity of the abdomen. The stools are at the same time of a white or clay colour, the urine is scanty, and the pulse is always small, and generally becomes quicker as the night approaches.

In consequence of the vitiated state of the gastric juice and impaired digestion, a morbid acidity prevails; and a symptom arises from this cause, which with some has given name to the disease, viz. a habit of eating dirt, chalk, or whatever will obtund acrimony.

This vitiated action is propagated throughout the whole alimentary canal; the lacteals are abraded by acrimonious fluids, and no longer possess the power of absorbing healthy chyle; hence the lymphatic glands become indurated and inflamed; the liver also is enlarged and of a scirrhous hardness; the blood, poor, vapid, and colourless, no longer stimulates the heart and arteries to action; hence asphyxia and sudden death.

Fatal consequences usually attended this disease. On dissection the stomach is often found much enlarged and thickened in its coats; the liver is of an increased size, scirrhous, and always preternaturally white: biliary concretions are sometimes met with in the gall-bladder; the bile is never of a healthy appearance, but usually of a thin, watery consistence, and of a slightly yellow or fresh colour; the mesenteric glands are indurated and scirrhous, and polypous concretions are occasionally found in the heart.

The proper indications of cure seem to be, first to strengthen the general system, and give due energy to the constitution; and secondly, to correct the morbid acidity which prevails.

To answer the first of these purposes, the patient must be allowed a generous and nutritive diet, consisting principally of animal food and wine, or weak fermented liquors. Cane juice boiled to the consistence of a thin syrup (as in the first process of sugar-making) is also of a very restorative nature, and ought during crop-time to be allowed liberally. With a generous diet, the patient should be made to take moderate exercise daily, as a want of this will not fail to increase the general debility, and add to the disease. Warm clothing, with occasional frictions by means of flannels, will likewise be proper.

To assist the effects of these means, we must put the patient under a course of stomachic bitters, joined with aromatics, different preparations of the cinchona bark, with myrrh and chalybeates, as advised under the head of Dyspepsia.

The mistura ferri composita (see Phthisis) will be likely to prove a most valuable remedy in this disease.

The second indication is to be answered by alkalies and absorbents, as likewise recommended under the head of Dyspepsia. The

exhibition of an emetic of the cupri sulphas once or twice a week, as advised in phthisis, seems likewise proper.

When costiveness prevails, it ought to be removed by a use of some warm stomachic laxative, such as the tinctura rhei composita, or tinctura aloes composita.

If the disease has been of such standing as to be attended with anasarcous swellings, besides using the means already recommended, we must have recourse to diuretics, as advised in dropsy.

Where it is accompanied with a retention of the menses, we must endeavour to promote these by calling in the assistance of emmenagogues.—See Chlorosis.

In order that the depravity of appetite might not be indulged, the patient should be lodged in a room which has a boarded floor, and where he cannot possibly get any dirt; and when he goes out for exercise, he should be accompanied by an attendant, who will not permit him to eat it.

Dr. Chisholme, in his ingenious Essay on this disease,* says, it is remarkable that negroes who are subject to it have been much benefited by living in a low situation, near marshes, which quickly prove fatal to whites; and he had long observed this before he formed any theory on the subject. He adds, perhaps the hydrocarbonic air may act as a cordial; it is perhaps the nervous æther itself. It has been remarked, he says, by medical writers, that the attack of remittent marsh fevers is frequently preceded by an unusual flow of spirits.

From my own observations, during a long residence in the West Indies, I am ready to admit with Dr. Chisholme, that mountainous situations do not agree with cachectic negroes so well as low ones; but I cannot with him attribute the effect to the influence of marsh effluvia. Noxious vapours arising from stagnated waters and marshy grounds, acted upon by a powerful sun, prove, in warm climates, a never-failing source of disease under all circumstances, and under every condition of the body. The cachectic negro cannot endure the cold, chilling, and damp air of a mountainous situation; but in a low one (the more remote from marshy grounds or stagnant waters the better), he feels warm and comfortable, and breathes a pure dry air, moderated in its temperature by the refreshing and reviving breezes which come off the sea.

CACHEXIA APHTHOSA, OR CHRONIC THRUSH.†

CHRONIC thrush is a disease very frequently to be met with among the inhabitants of our West India colonies, many cases of it having

* See the New York Medical Repository.

† The common species of Aphtha, as principally affecting infants, is included among the diseases peculiar to them; but in Dr. Cullen's nosological arrangement it stands among the Exanthemata.

occurred during my practice there, but which is likewise apt to prevail in those northern countries where the cold is combined with a considerable degree of moisture, or where the soil is of a very marshy nature. It may in some cases be considered as an idiopathic affection, but it is more usually symptomatic. It is dependent on a cachectic state of the whole system, characterized by ulceration of the mouth, tongue, fauces, and intestinal canal.

It shows itself at first by an uneasy sensation or burning heat in the stomach, which comes on by slow degrees, and increases gradually in violence. After some time, small pimples, of about the size of a pin's head, appear on the tip and edges of the tongue, and these at length spread over the whole inside of the mouth, and occasion such a tenderness and rawness of the parts, that the patient cannot take any food of a solid nature; neither can he receive any vinous or spirituous liquor into his mouth, without great pungency and pain being excited: little febrile heat attends, although there is some thirst, but the skin is always remarkably dry, rough, and without the least moisture on it; the countenance is of a pale olive colour, the pulse is smaller and more languid than in health, general coldness is felt over the whole body, but more particularly in the extremities, and the urine is small in quantity, and sometimes exhibits a milky or wheyish turbidness.

These symptoms will continue probably for some weeks, the general health being sometimes better and sometimes worse, and then the patient will be attacked with acid eructations, and a vomiting of acrid phlegm, as likewise with a severe purging, which greatly exhausts his strength, and produces considerable emaciation of the whole body. The stools indicate a defective biliary secretion, strongly resembling thick oatmeal gruel in an incipient state of fermentation; but there is no pain or enlargement of the liver, nor jaundice, although the complexion is somewhat of the olive colour. After a little time the symptoms cease, and he again enjoys better health; but sooner or later the acrid matter shows itself once more in the mouth, with greater virulence than before, and makes frequent translations to the stomach and intestines, and so from these to the mouth again, until at last the patient is reduced to a perfect skeleton. Death in its approach still lingers, and seems as it were unwilling to overtake its languid victim, until, worn down with fatigue and inquietude, he sinks into a state of exhausted apathy, and life at length is extinguished.

General relaxation, exposure to cold combined with great moisture, obstructed perspiration, and an acrimony of the humours, are supposed to be the causes which give rise to the chronic thrush. Elderly people and persons with a shattered constitution are most liable to its attacks.

It often admits of palliation from the resources of medicine, but it is seldom cured, even at an early stage of the disease. When engendered beneath the influence of a tropical sun, or it has been

neglected, is of long standing, or has made its attack in an advanced period of life, it will terminate fatally.

The principal appearances to be observed on dissection are the aphthæ, which extend through the whole of the alimentary canal. The muscles throughout the body are relaxed and flaccid, and their connecting cellular membrane is divested of any fat.

It will in all cases be advisable to begin the cure with giving a gentle emetic, to dislodge the acrid phlegm with which the stomach is usually loaded; and if any acidity prevails afterwards, (which may be known by sour belchings attended with a degree of heat and pain,) a little magnesia, or a small quantity of the absorbent mixture* here recommended, may then be taken occasionally.

Wherever we suspect the disease to have arisen or to be kept up from the ingesta, then, besides an emetic, it may be right to cleanse the primæ viæ by some gentle cathartic; as the irritating matter, when permitted to accumulate in the alimentary canal, increases the morbid affection of the intestines. A combination of rhubarb with magnesia, or the submuriate of mercury, will be a proper laxative. Medicines of this nature are however to be administered only in the first stage of the disease, as the risk of inducing excessive purging more than counterbalances the chance of advantage from them. In an advanced stage of the disease, where it is found necessary to evacuate the intestines, emollient clysters may be employed.

When a purging arises, we should have recourse to astringents joined with opiates, agreeably to the prescriptions below,† or as advised under the head of Diarrhœa; besides which, the patient should drink about a pint a day of the mistura cornu usti, or the same quantity of lime-water with an equal proportion of milk.

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* 1. ℞ Magnesiæ, ʒj.
Aq. Puræ, f. ℥vss.

Spirit. Cinnam. f. ʒiij.
Liquor. Ammon. f. ʒj. M.
Capiat cochl. ij. larg. pro re nata.

† 2. ℞ Confect. Catechu, ℥ij.

Aq. Cinnam. f. ℥ij.
—— Puræ, f. ℥iij.
Tinct. Kino, f. ʒij.
—— Opii, ♏ xxv. M.
ft. Mistura, cujus sumat cochl. ij. vel iij. ter in die.

Vel,

3. ℞ Mister. Cretæ, f. ℥iv.
Spirit. Cinnam. f. ℥j.
Tinct. Catechu, f. ʒij.
—— Opii, ♏ xxvj. M.

* 1. Take Magnesia, one drachm.
Pure Water, five ounces and a half.
Spirit of Cinnamon, 3 drachms.
Solution of Ammonia, 1 drachm.
Of this mixture take two table-spoonsful occasionally.

† 2. Take Confection of Catechu, two drachms.
Cinnamon Water, two ounces.
Pure Water, three ounces.
Tincture of Kino, two drachms.
———— Opium, forty drops.
Of this mixture let two or three table-spoonsful be taken thrice a day.

Or,

3. Take Chalk Mixture, four ounces.
Spirit of Cinnamon, one ounce.
Tincture of Catechu, 2 drachms.
———— Opium, forty drops.
Mix them. The dose may be the same as the former.

Where there is no tendency to excessive purging, opiates perhaps may be omitted, unless they be necessary to procure sleep or allay irritation.

In mitigating the pain, exhaustion, and despondency, which signalize the ravages of the disease towards its fatal termination, opium is indeed the remedy principally to be relied on.

With the view of determining the humours to the surface of the body, it will be right to give frequent small doses of some diaphoretic, such as the pulv. ipecac. compos.; and to assist their operation, flannel should be worn next to the skin. Should these fail in exciting a proper perspiration, and the patient continue to waste in flesh, a tepid bath may prove serviceable, and where a natural one can be procured, it ought to have the preference.

To remedy the inconvenience arising from the soreness of the mouth and tongue, these should be washed frequently with some kind of healing astringent gargle.*

When the rectum is affected, mild injections are proper, and produce effects similar to those of gargles in the fauces; they should consist of mild mucilaginous and gently stimulating decoctions, such as veal broth, boiled with rice and bruised turnips, or turnip radishes, which will likewise prove an excellent article of diet.

In mild cases of the disease, a decoction of the cinchona bark combined with the subcarbonate of soda, is often used internally, and with much advantage. In those cases where it puts on an alarming appearance, this preparation should be employed as a gargle, and the powder be administered in as large doses as the stomach will bear. If it excites a purging, a few drops of tinct. opii may be added to each dose.

In its first or simply dyspeptic state, the disease may often be

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* 4. ℞ Infus. Rosæ Compos. f. ℥vj.
Aluminis, ʒjss.
Mel. Optim. f. ℥j.
Liquor. Plumbi Subacet. ♏ x.
ft. Gargarisma.

Vel,

5. ℞ Zinc. Sulphat. gr. x.
Aq. Rosæ, f. ℥viij.
Tinct. Myrrh. f. ℥j. M.

Vel,

6. ℞ Decoct. Hord. f. ℥vj.
Mel. Rosæ, f. ℥j.
Aluminis, ʒj.
Tinct. Myrrh. f. ℥ss. M.

Vel,

7. ℞ Aq. Fervent. ft. ℥v.
Mellis Boracis, ℥j.
Tinct. Opii, ♏ xxvj. M.

* 4. Take Compound Infusion of Roses, six ounces.
Alum, one drachm and a half.
Honey, one ounce.
Solution of Subacetate of Lead, fifteen drops.
Mix them for a gargle.

Or,

5. Take Sulphate of Zinc, ten grains.
Rose Water, eight ounces.
Tincture of Myrrh, one ounce.
Mix them.

Or,

6. Take Decoction of Barley, six ounces.
Honey of Roses, one ounce.
Alum, one drachm.
Tincture of Myrrh, half an ounce.
Mix them.

Or,

7. Take Warm Water, five ounces.
Honey of Borax, one ounce.
Tincture of Opium, forty drops.
Mix them.

removed in northern climates by a few doses of calomel, and some bitter infusion combined with magnesia or rhubarb. Occasionally mercury has been used both externally and internally in this disease with advantage: externally in the form of ointment or plaster to the hepatic region; internally, in that of the hydrargyri submurias combined with opium.

The diet in cachexia aphthosa should consist only of such things as are light and nutritive, as milk, mucilaginous soups, jellies, preparations of barley, sago, rice, Indian arrow-root, plantains, bananas, &c.; lime-water mixed with milk may be used for ordinary drink. It will be best to abstain from wine, spirits, and all fermented or fermenting liquors. If any is used, Port wine when diluted with water may be the least injurious.

To restore the lost vigour and tone of the system, astringent bitters, such as infusions of cascarcilla and cinnamon bark, of lemon and pomegranate rind in lime water, with chalybeates, myrrh, and other tonics, may be used, as advised under the head of Dyspepsia; together with such moderate daily exercise in the open air in mild weather as the strength will admit of. If the patient's circumstances will allow of his removing from a warm climate to a cold one, where the air is dry, he should do it before the disease becomes inveterate.

ORDER II.

INTUMESCENTIÆ.

SWELLING of the whole or a great part of the body externally.

I.—INTUMESCENTIÆ ADIPOSÆ, OR FATTY SWELLINGS.

POLYSARCHIA, OR CORPULENCE.

CORPULENCE, when it arrives at a certain height, becomes an absolute disease. The increase of the omentum particularly, and the accumulation of fat about the kidneys and mesentery, swell the abdomen, and obstruct the motions of the diaphragm; whence one reason of the difficulty of breathing, which is peculiar to corpulent people: while the heart and large vessels connected therewith are in like manner so encumbered, that neither the systaltic nor subsultory motion can be performed with sufficient freedom, whence weakness and slowness of the pulse; but when the whole habit is in a manner overwhelmed with an oily fluid, the enlargement of the cellular interstices will necessarily interrupt the general distribution and circulation throughout the nervous and vascular systems, impeding the action of muscular fibres, and producing insensibility, somnolency, a disposition to apoplexy, and death.

The general exciting cause of obesity, independent of peculiarity of habit, is certainly a free indulgence of the appetite in the

use of very nutritive food and fermented liquors, conjoined with an inactive life; since it is only among those who enjoy the means of obtaining the comforts of life without hard labour that this state is observed. The citizen in easy circumstances, the indolent rector, the opulent farmer (and especially their wives, who enjoy their feeding without anxiety or much exercise), the masters and mistresses of well-frequented inns, and the sergeants of regiments in peaceable quarters, or of the militia, &c., are those whose rotundity of belly marks the superabundance of their ingesta, and who upon the least exertion perspire and wheeze under a load with which they have voluntarily encumbered themselves.

When a person of a constitution which is predisposed to obesity is enabled to indulge in good feeding, leads a calm indolent life, free from mental inquietude, and sleeps much, corpulence generally ensues. The causes of corpulence being thus well understood, the means of prevention and removal are not less obvious: in this the patient must, in a great degree, minister to himself; the prevention and cure will depend upon the proper regulation of his diet, exercise, and sleep. Medicine will only be necessary to obviate particular symptoms, or diseases arising from or connected with it.

The disease frequently, however, steals on so imperceptibly, that it becomes inveterate before people begin to think of pursuing any means for obviating it.

To get rid of too much fat without any injury to the constitution, the patient should in a very gradual manner diminish the usual quantity of his aliment, taking less nutritious substances for food; he should drink as little as he can with ease to his sensations, and particularly of malt liquors; he should use regular and daily active exercise, abstain from suppers, take short rest, sleep but few hours, and rise early every morning. To assist these means, and compress the bowels (increasing their absorption probably thereby), he may put a proper bandage round the belly, so that it can be tightened or relaxed with ease. An under waistcoat, with two or three rows of buttons, will answer this purpose very well. By a rigid pursuance of these means for a due length of time, I have no hesitation in affirming that the most corpulent and unwieldy man or woman may by perseverance be reduced within moderate bounds; with an acquisition of health, strength, and vigour, both of body and mind.

Newmarket affords abundant proofs how much may be done by active exercise and a spare diet, as jockeys have been known to reduce themselves a stone and a half in the space of a week or two. To the question proposed to a person* well versed in the business of training, "Would he recommend a similar process to reduce corpulency in other people, whether male or female?" the

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* See Code of Health, by Sir John Sinclair.

answer was in the affirmative, as he had *perceived from experience* that the constitution does not appear to be injured by it. It will, however, be most prudent in all cases to reduce obesity in a gradual manner, which may be done effectually by keeping the eyes open, the mouth shut, and the legs in motion ; or in other words, by eating and drinking sparingly, by sleeping little, and taking much active exercise.

The case of Mr. Thomas Wood, miller, which is published in Vol. 2d of Medical Transactions of the College of Physicians, is likewise strongly illustrative of what may be accomplished in circumstances of extreme corpulence, and the diseases consequent thereon, by a rigid adherence to the plan just recommended.

As medicines, diaphoretics, with an occasional use of moderate purging, have been employed. Soap is recommended to melt down and facilitate the absorption of the fat in corpulent people ; but probably the potassæ subcarbonas would be more powerful. Diuretics might possibly be used with advantage. The aërated alkaline water, which is supposed to render the fat more fluid at the same time that it determines to the kidneys, may be taken by the patient for his ordinary drink.

Vinegar and lemon-juice are too frequently used by young women to reduce corpulence ; but an excessive use of acids is apt to destroy the digestive powers, and in the end to bring on a train of dyspeptic complaints.

II.—INTUMESCENTIÆ FLATUOSÆ, OR FLATULENT SWELLINGS.

EMPHYSEMA.

THIS disease consists in a collection of air in the cellular membrane. In general it is confined to one place ; but in a few cases it spreads universally over the whole body, and occasions a considerable degree of swelling.

It sometimes arises spontaneously, which is, however, a rare occurrence, or comes on immediately after delivery, without any evident cause ; but it is most generally induced by some wound or injury done to the thorax, and that affects the lungs ; in which case, the air passes from these through the wound into the surrounding cellular membrane, and from thence spreads sometimes over the whole body.

Emphysema is attended with an evident crackling noise, and elasticity upon pressure ; and sometimes with much difficulty of breathing, oppression, and anxiety.

We are to consider it as a disease by no means unattended by danger : but more probably from the causes which give rise to it, than any hazard from the complaint itself.

The intentions of cure which we should have in view must be, first, to remove the cause of the disease ; secondly, to relieve the urgent symptoms ; and, thirdly, to evacuate the collected air.

To answer the first of these, the assistance of surgery will be necessary, as arising most commonly from a wound or other injury

done to the thorax, which at the same time affects the lungs, as in the case of a fractured rib, the ragged edges of which penetrate the pleura and substance of the lungs, and thereby admit of an extravasation of air into the cellular membrane. In such cases the air is to be evacuated by scarifications into the cellular membrane in different parts of the body, as circumstances may require, assisted by proper pressure with the hand.

Violent dyspnœa and anxiety are to be relieved by blee'ing and laxatives; and the pain and uneasiness arising from the distension by relaxing applications to the skin, such as the unguentum cetacei, &c.

TYMPANITES, OR TYMPANY.

Tympany consists in a violent distension either of the intestines, or cavity of the abdomen, by wind In the former instance it has been supposed to arise from the sudden suppression of diarrhœa, or dysentery, or as a consequence of febrile diseases, or the sudden drying up of long-continued discharges; from cutaneous eruptions, or a use of crude vegetable aliment; and in the latter from an erosion of the intestines, the effect also of preceding complaints.

Tympanites intestinalis sometimes comes on suddenly, at others it is more slow in its progress, and preceded (be the cause what it may) by great flatulency, borborygmi, and a frequent expulsion of air upwards and downwards, attended with colic pains. As it advances, the abdomen becomes considerably distended, and retains the same figure under every variation of position. The swelling does not yield much to pressure, and in what it does, it soon recovers its former state; it feels very elastic, but no fluctuation can be perceived. The urine at first is not altered either in quantity or quality; but in the advanced stage of the disease a change takes place in both respects, and dysuria and even ischuria sometimes comes on. The body is usually very costive, the appetite is impaired, thirst, heat, and pyrexia attend, and general emaciation ensues.

In time the respiration becomes difficult, with much anxiety and cough; the strength is exhausted, the belly is enormously swelled, and the patient is not unfrequently destroyed in consequence of supervening gangrene.

In tympanites abdominalis the swelling is more equal than in the former species, the tension greater; it is more elastic, and, upon percussion, sounds like a drum or bladder filled with air. Moreover, there are no discharges of flatus.

Tympanites is easily to be distinguished from ascites by the absence of fluctuation, by the tense feel of the abdomen, by the quick reaction of the parts after removing the pressure of the finger, by the frequent desire to belch, and by the state of the bowels and urine at the commencement of the disease.

It is, almost in every instance, an obstinate and dangerous

disease, slow in its symptoms, marking a total relaxation of the system; and therefore it frequently terminates in dropsy, showing the same emaciation of countenance, dry cough, and hectic state, in the end. An unimpaired constitution with frequent explosions of flatus, showing that the air is contained within the intestines, may be regarded in a favourable light.

When the wind is confined within the intestines, its evacuation is to be attempted by introducing an unarmed clyster-pipe up the rectum, and keeping it there for some time, so as to take off the resistance of the sphincter: and by giving carminatives, essential oils, spice, and stomachics, which may be joined as in the following forms,* or as advised under the head of Dyspepsia; and when costiveness prevails, by an occasional use of laxative medicines, joined with aromatics and essential oils, or clysters† frequently repeated.

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* 1 ℞ Pulv. Cinnam. Comp.
Extract. Gentian. āā gr. x.

Ol. Anisi, ♏ iij.
Syrup. Zingib q. s. M.
ft. Bolus, 4tis horis sumendus, cum cochl. magnis duobus misturæ sequentis.

2. ℞ Aq. Menth. Pip.
Misturæ Camphoræ, āā f. ℥ijss.

Spirit. Ætheris Sulph. f ℥iss.

Tinct. Card. C. f. ℥ss. M.

ft. Mistura, capiat cochl. ij. pro dos.

Vel,

3. ℞ Infus. Cort Cinchon. f. ℥j.

Tinct. Cardam. C.
Spirit. Pimentæ, āā f. ℥ij.

—— Lav. Comp. f. ℥ss. M.

ft. Haustus, ter quaterve in die sumendus.

Vel,

4. ℞ Infus. Cascaril f ℥j.
Tinct. Calumb f. ℥j.
Spirit. Carui,
—— Anisi, āā f. ℥iss. M.

ft. Haustus.

† 5. ℞ Sem. Anis. Contus. ℥iij.
Flor. Anthemidis, ℥ss.
Coque ex Aq. Fontan. Ojss. ad f. ℥xij.
Colat. adde

Sodæ Sulphat. ℥ss.
Ol. Terebinth. f. ℥ij. ℥ss. M.

ft. Enema.

* 1. Take Compound Powder of Cinnamon, Extract of Gentian, of each ten grains.
Oil of Aniseed, five drops.
Syrup of Ginger, a sufficiency to form a bolus, which may be taken every four hours with two table-spoonsful of the following mixture.—

2. Take Peppermint Water,
Camphor Mixture, of each two ounces and a half
Spirit of Sulphuric Æther, one drachm and a half.
Compound Tincture of Cardamoms, half an ounce.
Mix them. The dose may be two table-spoonsful.

Or,

3. Take Infusion of Peruvian Bark, one ounce.
Compound Tincture of Cardamoms,
Spirit of Pimenta, of each two drachms.
Compound Spirit of Lavender, half a drachm.
Mix them, and take this draught three or four times daily.

Or,

4. Take Infusion of Cascarilla, one ounce.
Tincture of Calumba, one drachm.
Spirit of Caraway,
——— Aniseed, of each one drachm and a half.
Mix them for a draught

† 5. Take Aniseed, bruised, three drachms.
Chamomile Flowers, half an ounce.
Pure Water, one pint and a half.
Boil them until the liquor is reduced to twelve ounces, strain it, and add
Sulphate of Soda, half an ounce.
Oil of Turpentine, from two drachms to half an ounce.
Mix them for a clyster.

Should these gentle means fail in procuring sufficient evacuations, we must then employ active purgatives ;* and where there is great irritability of the stomach, with nausea and frequent vomiting, it will be advisable to give them in the form of a pill, as being most likely to be retained. If the disease resists all our endeavours, and the bowels continue obstinately costive, with increasing distension, thirst, heat, and other symptoms of pyrexia, we should then have recourse to the lancet, in order to guard against supervening inflammation and its consequences. It is only in acute attacks, however, that we need dread such a termination.

Antispasmodics of the strongest kinds, such as assafœtida, æther, &c., with infusions of horseradish and ginger, together with chalybeates, are remedies which have sometimes proved useful in tympanites, and therefore should not be neglected.

To excite the action of the distended intestines, it has been recommended, along with these remedies, to apply cold substances, such as iced water or snow, to the belly, after which it is to be bandaged tight with flannel. A case of severe tympanites, some time ago, came under my care, wherein very great benefit was derived from the frequent application of pounded ice to the abdomen. It is probable that fricti ns with turpentine, oils, the linimentum ammoniæ fortius, or the linimentum camphoræ, and the hand, might afford some relief, and excite the intestines, when assisted by pressure and other proper means, to discharge the accumulated air. The application of a warm stimulating plaster, or even a blister, may be tried, if these means fail. Mercurial frictions upon the surface of the abdomen, with active purgatives, sometimes prove useful in tympanites.

It has been proposed as a query,† Whether the cold bath, continued long enough to become antispasmodic and relaxant, might not produce good effects in this disease as well as in trismus ?

To afford relief in desperate cases, where the air is diffused in the cavity of the abdomen, it may be necessary to have recourse to the operation of paracentesis, or tapping with a small trocar. In this case, tonics will likewise be advisable.

During the continuance of the disease, that aliment which is least apt to prove flatulent should be taken, and such things be

† See Dr. Temple's Practice of Physic, p. 234.

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* 6. ℞ Tinct. Sennæ Comp. f. ℥j.
—— Jalapæ, f. ℥ij. M.
ft. Haustus cathartic us.
Vel,
7. ℞ Extract. Colocynth. C. gr. xv.
Hydrargyri Submur. gr. v.
Ol. Carui, q. s. M.
ft. Massa, in pilulas iv. divid. pro dos.

* 6. Take Compound Tincture of Senna, one ounce.
Tincture of Jalap two drachms.
Mix them as a purgative draught.
Or,
7. Take Compound Extract of Colocynth, fifteen grains.
Submuriate of Mercury, five grains.
Oil of Caraway, a sufficiency to form the mass, which divide into four pills. to be taken at once.

given as will check the fermentation of the food. The mineral acids and small quantities of ardent spirits will have this effect.

Should we be so fortunate as to remove the disorder, the patient must pay particular attention to his diet, avoiding all food of a flatulent nature, and using only such as is light and easy of digestion. He is at the same time to guard against costiveness, by an occasional use of some stomachic aperient, and to invigorate his body by gentle exercise, and the other tonic means advised under the head of Dyspepsia.

III.—INTUMESCENTIÆ AQUOSÆ, OR WATERY SWELLINGS.

HYDROPS, OR DROPSY.

DROPSY is a preternatural or morbid accumulation of a serous or watery fluid in some parts of the body, impeding or preventing the functions of life; and receives different appellations, according to the particular situation in which it is lodged.

When it is diffused through the cellular membrane, either generally or partially, it is called anasarca.

When it is deposited in the cranium, it is called hydrocephalus.

When in the chest, hydro-thorax, or hydro-pericardium.

When in the cavity of the abdomen, ascites.

In the uterus, hydrometra; and within the scrotum, hydrocele.

Water is likewise encysted in the ovarium now and then, and is named ascites ovarii.

Abdominal dropsy is much more common than the thoracic: the average may be about one thoracic to six or seven abdominal cases.

Infants, youth, and adults, are equally liable to these effusions in the various cavities of the body.

A modern writer* having remarked, that in many cases of dropsy the urine possesses the property of being coagulated by heat, instead of classing dropsical affections according to their situation, has divided them into those with coagulable, and those with uncoagulable urine.

The causes of these diseases are, a family predisposition thereto, frequent salivations, excessive and long-continued evacuations, a free use of fermented or spirituous liquors, (which never fail to destroy the digestive powers,) scirrhosities of the liver, spleen, pancreas, mesentery, and other abdominal viscera; preceding diseases, as the jaundice, diarrhœa, dysentery, phthisis, asthma, gout, intermittents of long duration, scarlet fever, and some others of the exanthemata; a suppression of accustomed evacuations, the sudden striking in of eruptive humours, ossification of the valves of the heart, polypi in the right ventricle, aneurism in the arteries,

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* See Observations on the Nature and Cure of Dropsy, by J. Blackall, M. D.

tumours making a considerable pressure on the neighbouring parts, permanent obstruction in the lungs, rupture of the thoracic duct, exposure for a length of time to a moist atmosphere, laxity of the exhalants, defect in the absorbents, topical weakness, general debility, and whatever powerfully disposes the body to a state of relaxation.

Diminished absorption and increased effusion, or both united, may be considered as the proximate causes of the different species of watery swellings.

ANASARCA, OR DROPSY IN THE CELLULAR MEMBRANE.

THIS species of dropsy shows itself at first with a swelling of the feet and ankles towards evening, which for a time disappears again in the morning. The tumefaction is soft and inelastic; and when pressed upon with the finger, retains its mark for some time, the skin becoming much paler than usual.

By degrees the swelling ascends upwards, and occupies the thighs and trunk of the body, and, at last, even the face and eyelids appear full and bloated. When it has become pretty general, the viscera are affected in a similar way; the cellular membrane of the lungs partakes the affection, the breathing then becomes difficult, and is accompanied by a cough, and the expectoration of a watery fluid; the urine is small in quantity, high-coloured, and deposits a reddish sediment; sometimes, however, it is of a pale whey colour, and more copious; the belly is costive, the perspiration much obstructed, the countenance yellow, and a considerable degree of thirst, with emaciation of the whole body prevails. To these symptoms succeed torpor, heaviness, and a slow fever.

In some cases the water oozes out through the pores of the cuticle; in others, being too gross to pass by these, it raises the cuticle in small blisters; and sometimes the skin, not allowing the water to escape through it, is compressed and hardened, and is at the same time so much distended as to give the tumour a considerable degree of firmness.

The disease is always to be regarded as admitting more readily of a cure when it arises from topical weakness or general debility, than when it has been occasioned by visceral obstruction; as likewise when recent, than where it has been of long continuance. The skin becoming somewhat moist with a diminution of thirst, and an increase in the flow of urine, are to be regarded as very favourable symptoms. In some few cases nature makes powerful efforts of her own accord, and the disease goes off by a spontaneous crisis, either by vomiting, purging, or an unusual discharge of urine; but this does not often happen. Concomitant organic disease, great emaciation, erysipelatous inflammation, much drow-

siness, petechiæ and ecchymosis, hæmorrhage, febrile heat, great thirst, and a quick small pulse, are very unfavourable symptoms.

On opening the bodies of anasarcous persons after death, the whole of the cellular membrane is found distended with an aqueous and serous fluid. In the interior of the abdomen, the stomach is not unfrequently found scirrhous, the spleen enlarged and hard, the mesenteric glands much increased in size, and the liver enlarged, indurated, and beset with tubercles. In the thorax, we frequently find, besides water in the cavities of the pleura and pericardium, an enlargement of the heart, adhesions of this to the pericardium, flakes of lymph floating in the water of the pericardium, in the cavity of the chest, or loosely attached to the pleura. Sometimes we meet with white spots or depositions of lymph upon the surface of the heart, ossification of the valves of the aorta, the internal coat of the aorta inflamed, aneurism of the aorta, and, lastly, tubercles, or vomicæ in the lungs. When dropsy occurs connected with this state of local disease, it generally assumes the form of anasarca and hydro-thorax, or that of hydro-pericardium.

In the cure of anasarca we are to keep in view the three following indications :—

1st, To remove the remote causes of the disease :

2dly, To evacuate the serous fluid already collected : and,

3dly, To restore the tone of the system, and strengthen the general habit.

In dropsical cases we should always carefully investigate whether the disease is an original one, or prevails as a symptom of some other ; for by removing the cause we shall often be enabled to perform a cure. For instance, if it has arisen as the consequence of intemperance, a free use of spirituous liquors, exposure to a moist atmosphere, or the having had recourse to large evacuations, particularly by bleeding, these ought carefully to be avoided in future ; or if it has proceeded from long-continued intermittents, obstructions in the abdominal or thoracic viscera, and the like, these should be obviated, if possible.

In the treatment of anasarcous swellings arising from the pressure of a tumour on some large lymphatic, the only thing that can be done is to remove it. When weakness of a limb, in consequence of a sprain or some contusion, has given rise to these swellings, the best method of cure will be to support the weakened parts, either with a laced stocking or a flannel roller, to prevent their yielding to distension, till in the course of time, and by the effects of cold bathing and moderate frictions, they recover their natural tone.

When œdematous swellings come on in consequence of any of the lymphatic vessels of a limb being cut, as sometimes happens in extirpating indurated glands from the axilla, small punctures made in the under part of the limb will afford immediate relief.

The treatment of the diseases on which dropsy may depend has already been pointed out in various parts of this treatise, each

under its distinct head; but unfortunately it may, and does sometimes, depend on diseases which are incurable, such as polypi of the heart, ossifications of its valves and great vessels, erosions of the thoracic duct, and scirrhosity of the liver, spleen, &c. In such cases, medicine will avail but little.

To answer the second indication, of evacuating the serous fluid already collected, we must either have recourse to openings made immediately into the cellular membrane, or we must endeavour to excite certain serous excretions.

The openings most frequently used in anasarca are either slight scarifications or small punctures. In having recourse to these, we should, however, take care to avoid them in parts that are dependent, and they should be made so superficial as to extend to no greater depth than the cellular membrane, as deep incisions in dropsical parts are very apt to become gangrenous. To promote a discharge of the water by the several orifices, the parts may be bathed three or four times a day with some kind of emollient fomentation.*

At an early stage of dropsy, issues made with caustic below one or both knees have sometimes been employed to evacuate the water from the upper parts; but they are by no means so safe as small punctures or slight scarifications, and if inserted in parts that have lost their tone, might terminate in gangrene.

With the like intention of drawing off the water from anasarcous limbs, blisters have sometimes been employed; but the objection which has been urged against the use of issues applies equally to these, and therefore they should be resorted to with great circumspection and caution.

The application of colewort-leaves to the legs and feet of anasarcous persons, is another way which has been proposed for drawing off the water; but although they become imbued with moisture, still their effect is too trifling to be depended upon.

An excitement of the different excretions is the other mode which has been proposed for carrying off the fluid diffused throughout the cellular membrane. This is to be done by emetics, purgatives, diaphoretics, and diuretics; all of which, by their evacuating effects, tend to increase the power of the absorbents.

Emetics† have been much administered in dropsical cases, under the supposition that they greatly promote absorption, and in many instances they have certainly been attended with a very good effect.

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* 1. ℞ Fol. Malvæ,
Flor. Anthemidis, āā ℥jss.

Aq. Fontan. Oiv. Paulisper coque, et cola pro fotu.

† 2. ℞ Oxymel. Scillæ, f. ℥vj.
Vin. Ipecac. f. ℥ss. M.

℞ Haustus emeticus.

* 1. Take Marshmallow Leaves,
Chamomile Flowers, of each one ounce and a half.
Pure Water, two quarts. Boil them slowly fo rsome time; then strain off the liquor, and use it for fomentation.

† 2. Take Oxymel of Squill, six drachms.
Wine of Ipecacuanha, half an ounce.
Mix them for an emetic draught.

To employ them, however, with advantage, we ought to repeat them frequently. If they are found to weaken the patient, without procuring any mitigation of the disorder, we should then desist from using them.

An emetic of the cupri sulphas, as advised under the head of Phthisis, or below,* appears to be the most proper, as having less tendency to exhaust than any other used in common.

Purgatives are likewise much employed in dropsical cases, with the view of carrying off a portion of the water by stool, and of exciting absorption; and as the stimulus of those which are of a drastic nature† is most readily communicated to the system, so these are more generally used than those of a mild kind. The potassæ supertartras is however, a purgative of this nature, which has been given with considerable success, but it is more usual to combine it with some of the drastics, such as jalap, elaterium,

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Vel,

3. ℞ Oxymel. Scillæ, f. ℥j.
Aq. Menth. f. ℥ss.
Antimon. Tartarizat. gr. j.—ij. M.

ft. Haustus.

* 4. ℞ Cupri Sulphat. gr. v. ad x.

Pulv. Ipecac. gr. v. M.

ft. Pulv. secundo vel tertio quoq. mane sumendus.

† 5. ℞ Scammon. gr. xij.
Hydrargyr. Submur. gr. v.

Pulv. Zingib. gr. vi. M.
ft. Pulvis pro dos.

Vel,

6. ℞ Pulv. Jalapæ,
—— Scammon, āā gr. xij.

—— Cinnamon. Comp. gr. x. M.

ft. Pulvis.

Vel,

7. ℞ Gum. Gambog. gr. iij. Terito bene cum
Tinct. Sennæ Comp. f. ℥ss. et adde

—— Jalapæ, f. ℥ij.
Syrup. Zingib. f. ℥iij. M.
ft. Haustus.

Vel,

8. ℞ Extract. Elaterii, gr. j. ad ij.

—— Zingib. gr. x.
Ol. Junip. ♏ iij.
Syrup. Simp. q. s. M.
ft. Bolus, aut in pilulas iv. divid. pro dos.

Or,

3. Take Oxymel of Squill, one ounce.
Mint Water, half an ounce.
Tartarized Antimony, from one to two grains.
Mix them.

* 4. Take Sulphate of Copper, from five to ten grains.
Powder of Ipecacuanha, five grains.
Mix them, and let this powder be taken every second or third morning.

† 5. Take Scammony, twelve grains.
Submuriate of Mercury, five grains.
Powdered Ginger, six grains.
Mix them for a dose.

Or,

6. Take Powdered Jalap,
—— Scammony, of each twelve grains.
Compound Powder of Cinnamon, ten grains.
Mix them.

Or,

7. Take Gamboge, three grains. Dissolve it in
Compound Tincture of Senna, half an ounce; and add
Tincture of Jalap, two drachms.
Syrup of Ginger, three drachms.
Mix them for a draught.

Or,

8. Take Extract of Wild Cucumber, from one grain to two.
Ginger in Powder, ten grains.
Oil of Juniper, five drops.
Syrup, a sufficiency to form a bolus, or divide the mass into four pills for a dose.

scammony, and gamboge,* than to give it alone. Evacuants, particularly of the drastic kind, are, however, only admissible and useful where the habit is indolent, and the dropsy extensive, without much local determination.

To administer purgatives with the greatest advantage, they ought to be repeated at as short intervals as the patient can bear; for, when purging is not carried to the degree of quickly exciting absorption, the evacuation weakens the system, and thereby increases the afflux of fluids to the hydropic parts.

Diaphoretics are another class of medicines which have been employed in dropsy. In a few instances sweating may, perhaps, have produced a good effect; but in general it proves inefficacious, and only tends to add to general debility. On this account diaphoretics are not much used in dropsical cases, particularly where there is great weakness and general relaxation of the system. Should the practitioner wish to make a trial of them under the failure of other remedies, he can administer them as here advised,† directing the patient at the same time to be laid between blankets, with a shirt and trowsers of flannel next to his skin, and to drink plentifully of tepid liquors, of which none probably may be more proper than mustard-whey.

Another method of producing a diaphoresis, and of thereby increasing absorption from the cellular membrane, is by warm air, or by warm steam. If the swelled legs of a dropsical patient are enclosed in a box, the air of which is made warm by a lamp or two, a copious sweat is soon produced by the increased action of

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* 9. ℞ Potassæ Supertart. ʒiij.
Gambog. gr. ij.
Pulv. Nuc. Mosch. gr. x. M.
ft. Pulvis.

Vel,

10. ℞ Pulv. E. Elaterii, gr. i.—ij.
Potassæ Supertart. ʒj.
Pulv. Cinnam. C. gr. v. M.
ft. Pulvis, pro dos sumendus.

† 11. ℞ Camphoræ, gr. v.
Pulv. Antimonial. gr. ij.
Confect. Aromat. gr. x. M.
ft. Bolus, horâ decubitûs sumendus.

Vel,

12. ℞ Liquor. Ammon. Acetat. f. ℥ss.
Aquæ Puræ, f. ʒj.
Vin. Antimon. Tartariz. ♏ xvj.
Spirit. Ammon. Aromat. ♏ x.
Syrup. Zingib. ʒij. M.
ft. Haustus.

* 9. Take Supertartrate of Potass, three drachms.
Gamboge, two grains.
Powdered Nutmeg, ten grains.
Mix them.

Or,

10. Take Powder of Wild Cucumber, from one to two grains.
Supertartrate of Potass, one drachm.
Compound Powder of Cinnamon, five grains.
Mix them, for a dose.

† 11. Take Camphor, five grains.
Antimonial Powder, two grains.
Aromatic Confection, 10 grains.
Make them into a bolus, to be taken at bed-time.

Or,

12. Take Solution of Acetate of Ammonia, half an ounce.
Pure Water, one ounce.
Wine of Tartarized Antimony, twenty-four drops.
Aromatic Spirit of Ammonia, fifteen drops.
Syrup of Ginger, two drachms.
Mix them as a draught.

the capillary glands, which is seen to stand on the skin, as it cannot readily exhale in so small a quantity of air, which is only changed so fast as may be necessary to permit the lamps to burn. At the same time the lymphatics of the cellular membrane are stimulated by the heat into greater action, as appears by the speedy reduction of the tumid legs.

Possibly it might be well worth trying an experiment upon a person labouring under a general anasarca, by putting him into a room filled with air heated to about 120 degrees, which would probably excite a copious general diaphoresis, and a universal cellular absorption, both from the lungs and every other part. That air of so great heat may be borne for many minutes without much inconvenience, has been demonstrated by the experiments made in heated rooms by Dr. Fordyce.

Another experiment of using warmth in anasarca and other diseases, might be by immersing the patient in warm air, or in warm steam, received into an oil-skin bag, or bathing tub of tin, so managed that the current of warm air or steam should pass round and over the whole of the body, except the head, which might not be exposed to it: and thus the absorbents of the lungs might be induced to act more powerfully by sympathy with the skin, and not by the stimulus of heat.*

By employing stimulants, we sometimes are able to increase the action of the absorbent vessels, and thereby occasion watery fluids to be absorbed from their cavities. As such, mercury has sometimes been made use of; but it is apt to leave a great degree of weakness behind it, and to prove thereby highly prejudical. If mercury will cure the disease on which dropsy depends, then it will be a proper remedy, but not otherwise.

The parts affected with dropsy have been stimulated by rubbing them very well every morning with warm dry flannels; and the practice is certainly productive of a very good effect. Ammoniated liniment, and such other stimulating applications, can only prove useful in partial dropsies.

To remove swellings of the legs proceeding from a deficient action of the absorbents of the lower extremities, a warm saline pediluvium has often been used with success. The quantity of sea-salt should be about one-thirtieth part of the water, which, with about one-eightieth part of the sulphate of magnesia, or bitter cathartic salt, constitutes the medium strength of the sea-water round this island. In such a pediluvium, the legs should be immersed for half an hour every night for a fortnight, at the heat of about 96 or 98 degrees.

Dr. Reid, in his Treatise on Sea-bathing, recommends a universal warm bath of sea-water in œdematous swellings, and apparently has employed it with success. He advises friction at the

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* This and the former experiment have been proposed by the late Dr. Darwin. See vol. ii. of his Zoonomia, article iv. Sorbentia.

same time to be diligently used in the bath on the tumid limbs, taking care always to rub them from their extremities towards the trunk of the body, and not in the contrary direction, as in this way the progress of the fluids in the absorbent system must be most facilitated, though these vessels are furnished with valves to prevent its return. In a warm bath of sea-water, the stimulus of the salt is added to that of the heat.

The evacuation which will be attended with the least danger of inducing debility, and at the same time with the best effect, is the excretion by the kidneys; and it is on this account that diuretics are more generally employed in all cases of dropsy, than any other class of medicines. Even these often fail, however; but not unfrequently, we may presume, from their use being discontinued too soon.

Of the class of diuretics, none seems to be more active than the digitalis. Its power of increasing the discharge from the kidneys, and of succeeding in effecting a cure of dropsical affections, in consequence of the increased evacuation produced by it, has of late been clearly ascertained in a great variety of instances. On account of its acting powerfully on the nervous system, destroying its mobility, and weakening the vital powers by repressing arterial action, it has, however, by some practitioners, been thought an improper remedy in dropsy; but even large doses of it have been given in this disease without any of those uncontrollable and dangerous effects which are said to deter many from its use, being observed to ensue.

It is a circumstance of curious and interesting moment, not perhaps very generally known, that a relaxed, weakened, and depressed state of the system is the most favourable for displaying the full effects of digitalis. Dr. Withering* had early pointed out the fact, that in persons of tense fibres and great natural strength, labouring under ascites or anasarca, the digitalis seldom succeeded; and that, on the contrary, where the pulse was found feeble, or intermitting, the anasarcous limbs and body soft and yielding, the countenance pale, and the skin cold, the diuretic powers of the plant were more conspicuous.

We are informed by Dr. Maclean,† that these observations fully accord with those which he made; and he adds, that it seldom succeeds in those of a fat corpulent habit with a dull sluggish fibre, while it speedily relieves those of a weak, delicate, irritable constitution with a thin, soft, smooth skin, which in the anasarcous limb is transparent.

When the urine is not serous, I have perceived that digitalis usually fails of success; on the contrary, I have found it to succeed where the habit was not entirely depraved, or the substance of the viscera not affected. When the organs of digestion fail,

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* Se his Essay on Digitalis, p. 189.

† See his Inquiry into the Nature, &c. of Hydrothorax, p. 251.

and there is frequent sickness or diarrhœa, and the bad habit of body is more remarkable than the extent or seat of the dropsy, its use has appeared to be injurious.

It may not here be unworthy of notice, that where the foxglove is given in such doses as to excite nausea, or to produce an evident narcotic effect, it does not then operate as a diuretic. In a long use of it, its narcotic effect seems to preclude its action as a diuretic. A diarrhœa supervening on the use of this remedy, is likewise found to stop its diuretic effect.

If the digitalis does not answer within the first fortnight, the best way will be to change it for some other diuretic; as it not unfrequently happens, that where we have failed with one remedy of this class, we shall be successful with a second or a third. No class of medicines is so uncertain in their effect as this; and it will often occur that a diuretic of very inferior expectation will procure the effect we wish, after a failure of those which rank highest in power.

In employing the foxglove in dropsy, we may give it either in infusion* or saturated tincture, as mentioned under the head of Phthisis; or we may give it in substance, washing it down with a teacupful of any diuretic infusion.

The digitalis lutea has been found by Dr. Careno, of Vienna, to possess stronger diuretic powers than the digitalis purpurea, and without producing any of the usual noxious effects. He tells us† that he has succeeded in curing many dropsies with the digitalis lutea after the other species had failed.

The potassæ supertartras is another diuretic which is often employed in dropsical affections with a very happy effect. As possessing no deleterious qualities, and being easily managed by practitioners of the smallest judgment, a preference over the digitalis has been given to it by some. Whether it possesses as great an anti-hydropic power, has not been satisfactorily ascertained. The experiments of Dr. Home‡ and Dr. Ferriar‖ seem to assure us that it does; but from my own experience I am induced to conclude that it does not.

In some cases, however, the potassæ supertartras diminishes the swellings very speedily. It produces an increase of urine with watery stools; and for the most part lessens the patient's size more

† See Memoirs of the Royal Academy of Berlin, for 1794-5.
‡ Clinical Observations, Experiments, &c. p. 349.
‖ Medical Histories and Reflections.

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* 13. ℞ Infus. Digital. Purp. ℥vj.
Tinct. Card. Comp. ℥ij.
Spirit. Æther. Nitr. ℥i. M.
ft. Haustus, bis terve in die sumendus.

* 13. Take Infusion of Purple Foxglove, six drachms.
Compound Tincture of Cardamoms, two drachms.
Spirit of Nitric Æther, one drachm.
Mix them, and take this draught twice or thrice a day.

quickly than the increase of urine would lead us to expect. When it is likely to prove successful, it usually operates very early, producing, in general, an increased flow of urine within twenty-four hours; but its salutary effects have been known to have been delayed to the end of the third or fourth week. It is given in doses of from two drachms to one or two ounces a-day, as by habit it loses a great deal of its effect. When the quantity is considerable, it will be best to divide it into three or four doses, instead of taking it all at once, which few stomachs will bear. In conjunction with gamboge or elaterium, as before advised, it forms a powerful medicine, and, according to circumstances, may be made either to assist or take the lead of the digitalis.

From a junction of the potassæ supertartras with digitalis or squills* or both (see Hydrothorax,) interposing purgatives occasionally, the greatest advantages have been derived in some cases which have occurred in my practice.

A total abstinence from drink has long been considered as highly necessary in all cases of dropsy; but in many instances the practice has been carried to a considerable degree without any advantage. It seems, however, to have fallen a good deal into discredit, as large quantities of watery liquors are often now allowed, where diuretics, but more particularly the potassæ supertartras, are given. This mode of treatment seems indeed by far more proper than the former, as these medicines can hardly be carried in any quantity to the kidneys, without being accompanied with a large portion of fluid. When, upon a fair trial, the quantity of urine is not found to be increased by drinking water or other watery liquors,† their use may in that case be discontinued. Beer

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* 14. ℞ Potassæ Supertartrat. ℥ij.
Pulv. Cinnam. Comp. gr. v.
—— Digitalis, gr. j. M.
ft. Pulvis, bis terve in die sumendus.

Vel,

15. ℞ Pulv. Digitalis, gr. ss.—j.
—— Scillæ, gr. j.
Potassæ Supertart. ℥ij. M.
ft. Pulvis, ter in die adhibendus.

† 16. ℞ Rad. Armoraciæ Incis.
Sem. Sinap. C. āā ℥ss.
Aq. Bullient. Oj.
Infund. per horas xij. et adde Liquori colat
Potassæ Acetat. ℥iij.
Spirit. Junip. Comp. ℥ij. M.
Bibat æger cyathum ter quaterve in die.

* 14. Take Supertartrate of Potass, two drachms.
Compound Powder of Cinnamon, five grains.
Powder of Foxglove, one grain.
Mix them. It may be taken twice or thrice a day.

Or,

15. Take Powder of Foxglove, from half a grain to one grain.
———— Squill, one grain.
Supertartrate of Potass, two drachms.
Mix them, and let this powder be given thrice a day.

† 16. Take Horseradish Root, sliced,
Mustard Seed, bruised, of each half an ounce.
Boiling Water, one pint. Infuse them for twelve hours, and to the strained liquor add
Acetate of Potass, 3 drachms.
Compound Spirit of Juniper, two ounces.
Mix them, and let the patient drink a wine-glassful three or four times a day.

boiled with juniper berries is much used as a diuretic drink by the German physicians.

The different preparations of squill* have been employed very much in dropsical cases; but although this medicine has sometimes been attended with a good effect, still the advantages to be derived from it are by no means so certain as those we usually obtain from the digitalis or potassæ supertartras. A combination of squill and the submuriate of mercury† has been tried, but it has not been found to diminish the swellings in proportion to its diuretic effect.

The spiritus ætheris nitrici‡ is another diuretic, and may be combined with other medicines of this class.

A decoction of green broom, drank in large quantities, is also a diuretic of considerable powers, particularly in anasarcous cases. It may therefore be used with the other remedies which have already been advised.

Vel,

17. ℞ Decocti Genistæ Recent. ℥xij.

Potassæ Acetat. ℥ij.
Spirit. Armoraciæ Compos. f. ℥j.
M.

Sumat cochl. larg. iij. ter quaterve in die.

* 18. ℞ Potassæ Acetat. ℈j.
Aq. Fœnicul. f. ℥j.
Acet. Scillæ, f. ℥j.
Spirit. Armoraciæ C. f. ℥ij.

Tinct. Digitalis, ♏ xiij. M.

ft. Haustus, ter in die adhibendus.

Vel,

19. ℞ Pulv. Scillæ, gr. jss.

—— Cinnam. Comp.
Potassæ Acetat. ää gr. viij.

Syrup. Zingib. q. s. M.

ft. Bolus, ter in die capiendus.

† 20. ℞ Pilul. Scillæ, gr. vj.
Hydrarg. Submur. gr. ss. M.

Fiant pilulæ duæ, nocte maneque capiendæ.

‡ 21. ℞ Decoct. Genistæ Recent. f. ℥jss.

Spirit. Junip. C. f. ℥ij.

—— Æther. Nitrici, f. ℥j.

Oxymel. Scill. f. ℥ij. M.

ft. Haustus, ter in die sumendus.

Vel,

22. ℞ Fol. Digital. Purp. Sic. ℥ij.

Or,

17. Take Decoction of Fresh Broom, twelve ounces.
Acetate of Potass, two drachms.
Compound Spirit of Horseradish, one ounce.

Mix them, and take three table-spoonsful three or four times a day.

* 18. Take Acetate of Potass, one scruple.
Fennel Water, one ounce.
Vinegar of Squill, one drachm.
Compound Horseradish Spirit, two drachms.
Tincture of Foxglove, twenty drops.

Make these as a draught, which may be given three times a day.

Or,

19. Take Powder of Squill, one grain and a half.
Compound Powder of Cinnamon, Acetate of Potass, of each eight grains.
Syrup of Ginger, a sufficiency to form a bolus, which may be taken three times throughout the day.

† 20. Take Squill Pill, six grains.
Submuriate of Mercury, half a grain.

Make the mass into two pills, to be taken night and morning.

‡ 21. Take Decoction of Green Broom, one ounce and a half.
Compound Spirit of Juniper, two drachms.
Spirit of Nitric Æther, one drachm.
Oxymel of Squill, two drachms.

Mix them, and take this draught three times a day.

Or,

22. Take Purple Foxglove Leaves, dried, two drachms.

Bacher's pills* (which consist principally of hellebore) are among the diuretics often employed in dropsy. Whenever they produce a discharge of water, they diminish the swellings; but in cases of long standing they evidently weaken the patient, however cautiously given.

The tobacco tincture† is another remedy which has in some instances proved highly diuretic, when others have failed. Its use has been recommended by the late Dr. Fowler, of Stafford. Various other medicines‡ are to be included in the list of diuretics which may be resorted to in cases of need.

Spanish flies will be likely to prove a useful and powerful remedy of this class, because they debilitate neither the general system, nor the parts upon which they immediately act. In the dropsical complaints of elderly people, with whom their stimulating power is not likely to be so active as with those who are young, they are particularly indicated.

Aq. Bullient. Oss. Post horas duas cola, et adde

Spirit. Ætheris Nitrici, f. ℥j.

—— Junip. C. ℥ij. M.

Capiat cochl. larg. ij. 4tis horis.

* 23. ℞ Extract. Helleb. Nigr.
Myrrh. āā ℥ss.
Pulv. Card. Benedict. ʒjss.

Syrupi, q. s. M.

ft. Massa, in pilul. singul. gr. iv. distribuenda, quarum duas sumat pro dos. 6tis horis.

† 24. ℞ Tinct. Tabaci, ♏ x.

Spirit. Æther. Nitr. f. ʒij.

Oxymel. Scillæ, f. ʒj.
Aq. Pimentæ, f. ℥ss. M.

ft. Haustus, ter quaterve in die sumendus.

‡ 25. ℞ Aq. Fœnicul. f. ℥j.
Tinct. Cantharid. ♏ x.

Spirit. Æther. Nitric. f. ʒj.

—— Junip. C. f. ʒij. M.

ft. Haustus, ter in die adhibendus.

Vel,

26. ℞ Mass. Pilul. Scillæ, ʒj.
Sapon. Venet.
Gum. Ammon. āā ʒij.

Ol. Junip. ♏ x.
Syrup. q. s. M.

Boiling Water, half a pint. Infuse them for two hours, then strain off the liquor, and add

Spirit of Nitric Æther, one ounce.
Compound Spirit of Juniper, two ounces.

Of this mixture the patient is to take two table-spoonsful every four hours.

* 23. Take Extract of Black Hellebore,
Myrrh, of each half an ounce.
Holy-thistle in Powder, one drachm and a half.
Syrup, a sufficiency.

Form the mass into pills of about four grains each, of which take two for a dose every six hours.

† 24. Take Tincture of Tobacco, fifteen drops.
Spirit of Nitric Æther, two drachms.
Oxymel of Squill, one drachm.
Pimenta Water, one ounce and a half.

Mix them. This draught may be taken three or four times a day.

‡ 25. Take Fennel Water, one ounce.
Tincture of Spanish Fly, fifteen drops.
Spirit of Nitric Æther, one drachm.
Compound Spirit of Juniper, two drachms.

Mix them as a draught, which may be taken thrice a day.

Or,

26. Take Squill Pill, one drachm.
Hard Soap,
Gum Ammoniac, of each two drachms.
Oil of Juniper, fifteen drops.
Syrup, a sufficiency to form the

Turpentine* is another stimulating diuretic which has been employed by some practitioners with much success, when other remedies of a milder nature have failed. If we give the oleum terebinthinæ, we had better begin with about ten drops, which dose may be repeated three or four times in a day. The quantity is to be gradually increased, according to the state of the patient, and the effect produced.

The third indication which has been proposed for the cure of anasarca is, to strengthen the system. When the disease is in its incipient state, and perfectly recent, we may often be able to arrest its progress, by employing, at an early period, proper means for effecting this purpose: but when it has been of long standing, we shall in general be obliged to wait until the water has been evacuated by the means which have been proposed.

The tonic remedies best adapted for strengthening the system, have already been fully noticed under the head of Dyspepsia. These, therefore, when proper, must be had recourse to, together with moderate daily exercise, frictions every morning with warm flannels, and supporting the integuments of the lower extremities either by bandages or a laced stocking. If a preference is given to bandages, great care should be taken in applying them not to make a greater compression on the upper part of the limb than on the lower.

In some cases of dropsy, but more particularly in those where general debility has occasioned the disease, it may be proper to join diuretics to tonics, as in the manner here advised;† and this plan we may adopt from the commencement of the disease, keeping the body open at the same time with some gentle aperient.

Fiant pilul. xij. è sing. drachma, quarum iv. sumat ter in die, superbib. cyath. Decocti Genistæ Recentis.

* 27. ℞ Pulv. Sem. Sinap. ℈j.
Olei Terebinth. ♏ vj. ad. xx.
Syrup. Simpl. q. s. M.
ft. Bolus, ter quaterve die sumendus cum cyatho Decocti Genistæ.

† 28. ℞ Infus. Gentian. C. f. ℥j.
Tinct. Cort. Cinchon. f. ℥ij.
—— Cantharid. ♏ x.
Potassæ Acet. gr. x. M.
ft. Haustus, ter die sumendus.

Vel,

29. ℞ Pulv. Myrrh. ℥ss. Solve in

mass. Let twelve pills be made out of each drachm weight, of which four may be taken thrice a day, washing them down with a wine-glassful of a Decoction of Green Broom.

* 27. Take Powder of Mustard Seed, one scruple.
Oil of Turpentine, from ten to thirty drops.
Syrup, a sufficiency to form a bolus, which may be taken three or four times a day, washing it down with a tea-cupful of a Decoction of Broom.

† 28. Take Compound Infusion of Gentian, one ounce.
Tincture of Peruvian Bark, two drachms.
———— Spanish Fly, fifteen drops.
Acetate of Potass, ten grains.
Mix them. This draught may be taken three times a day.

Or,

29. Take Myrrh, half a drachm.
Dissolve it in

It not unfrequently happens that an erysipelatous inflammation which shows a tendency to gangrene, arises on anasarcous legs. Linen rags, moistened in a strong solution of the acetate of lead in water, in the proportion of two drachms of the former to half a pint of the latter, will be a good application in all such cases, even in preference to the cinchona bark, in the form either of fomentations or poultices. In the inflammatory affection of the lower extremities accompanying anasarca, Dr. Ferriar found much advantage from an infusion of digitalis used as a lotion.

The diet in all anasarcous cases ought to be light and nourishing, consisting chiefly of meats which are of easy digestion, and pungent aromatic vegetables, as garlic, mustard, onions, cresses, horseradish, shalot, &c. For common drink the patient may use any of the diuretic infusions before recommended. If wine is wished for, Rhenish will be most proper. If he lives in a damp situation, he ought to be removed into a dry one, and, if possible, into a warmer climate.

Spirit. Junip. C. f. ℥ij. et adde

Aq. Pimentæ, f. ℥ſs.

Tinct. Digital. Purp. ♏ xiij. M.

ft. Haustus.

Vel,

30. ℞ Infus. Cort. Cuspariæ, f. ℥jss.

Tinct. Calumb. f. ℥ij.

Potassæ Acetat. ℈j.
Spirit. Armorac. C. f. ℥j. M.

ft. Haustus.

Vel,

31. ℞ Infus. Digitalis, f. ℥vj.
Tinct. Card. C.

—— Cascaril. ää f. ℥iss. M.

ft. Haustus, ter in die capiendus.

Vel,

32. ℞ Pulv. Cinnam. C. gr. x.

—— Gentian. gr. xv.
—— Digital. gr. j. M.

ft. Pulv. mane, horâ merid. vespereque sumendus.

Vel,

33. ℞ Pulv. Calumb. gr. xv.

—— Zingib. gr. x.
—— Scillæ, gr. j.
Potassæ Supertart. ℥j. M.

ft. Pulv. ter in die capiendus.

Compound Spirit of Juniper, two drachms; and add
Pimenta Water, one ounce and a half.
Tincture of Foxglove, twenty drops.

Mix them.

Or,

30. Take Infusion of Angustura Bark, one ounce and a half.
Tincture of Calumba, two drachms.
Acetate of Potass, one scruple.
Compound Spirit of Horseradish, one drachm.

Mix them as a draught.

Or,

31. Take Infusion of Foxglove, six drachms.
Compound Tincture of Cardamoms,
Tincture of Cascarilla, of each one drachm and a half.

Mix them as a draught, to be taken three times a day.

Or,

32. Take Compound Powder of Cinnamon, ten grains.
Powder of Gentian, fifteen grains.
———— Foxglove, one grain.

Mix them. This powder may be taken every morning, noon, and evening.

Or,

33. Take Powder of Calumba, fifteen grains.
———— Ginger, ten grains.
———— Squill, one grain.
———— Supertartrate of Potass, one drachm.

Mix them. This powder is to be taken thrice a day.

ASCITES, OR DROPSY OF THE BELLY.

THIS disease is marked by a tense swelling of the abdomen, accompanied by an evident fluctuation.

The water is usually collected in the sac of the peritonæum, or general cavity of the abdomen; but sometimes it is found entirely without the peritonæum, and between this and the abdominal muscles. Collections of water, in some instances, begin by sacs formed upon and connected with one or other of the viscera, as happens frequently in the ovaria of women, as also on the surface of the liver.—(See Hepatitis.) These form that disease which has been termed encysted dropsy. Hydatids have been supposed to give rise to them.

In addition to the causes which have been enumerated as productive of anasarca, certain local affections, as diseases of the viscera of the abdomen, scirrhosities of the liver, spleen, or pancreas, enlargement of the mesenteric glands, local injury, &c., do sometimes occasion ascites.

Ascites is often preceded by loss of appetite, sluggishness, inactivity, dryness of the skin, oppression at the chest, cough, diminution of the natural discharges of urine, and costiveness. Shortly after the appearance of these symptoms, a protuberance is perceived in the hypogastrium, which extends gradually, and keeps on increasing, until the whole abdomen becomes at length uniformly swelled and tense.

The distension and sense of weight, although considerable, vary somewhat according to the posture of the body, the weight being felt the most in that side on which the patient lies, while at the same time the distension becomes somewhat less on the opposite one. In general the practitioner may be sensible of the fluctuation of the water, by applying his left hand on one side of the abdomen, and then striking on the other with his right. In some cases it will be obvious to the ear.

As the collection of water becomes more considerable, the difficulty of breathing is much increased, the countenance exhibits a pale or bloated appearance, an immoderate thirst arises, the skin is dry and parched, and the urine is very scanty, thick, high-coloured, and deposits a lateritious sediment. In general dropsy, the urine coagulates like the diluted serum of the blood, whilst in that which proceeds from unsound viscera, it is usually high-coloured, scanty, and, on cooling, deposits a pink-coloured sediment. With respect to the pulse, it is variable, being sometimes considerably quickened, and at other times slower than natural. Although ascites is sometimes accompanied by fever, still it is frequently absent. It has, however, been observed, that during ascites the derangement in the general system is greater than in other species of dropsy.

The principal difficulty which prevails in ascites, is the being

able to distinguish with certainty when the water is in the cavity of the abdomen, or when it is in the different states of encysted dropsy. To form a just judgment, we should attend to the following circumstances:—

When the preceding symptoms give suspicion of a general hydropic diathesis; when at the same time some degree of dropsy appears in other parts of the body; and when, from its first appearance, the swelling has been equally diffused over the whole belly, we may generally presume that the water is in the cavity of the abdomen. But when the swelling has not been preceded by any remarkable cachectic state of the system, and when, at its beginning, the tumour and tension had appeared in one part of the belly more than another, there is reason to suspect an encysted dropsy. Even when the tension and tumour of the belly have become general, yet, if the system or body in general appear to be little affected; if the patient's strength be not much impaired; if the appetite continue pretty entire, and the natural sleep be little interrupted; if the menses in females continue to flow as usual; if there be yet no anasarca, or, though it may have already taken place, if it be still confined to the lower extremities, and there be no leucophlegmatic paleness or sallow colour in the countenance; if there be no fever, nor so much thirst or scarcity of urine, as occur in a more general affection; then, according as more of these different circumstances take place, there will be the stronger grounds for supposing the disease to be of the encysted kind.*

By carefully attending to the symptoms of pregnancy, and which are enumerated under that head, we cannot fail to distinguish it readily from every species of dropsy.

Ascites is always to be considered as of very difficult cure, let the cause have been what it may. The urine being little diminished, or becoming more copious; the swelling of the abdomen subsiding, the skin ceasing to be dry, the strength originally little impaired, and the respiration becoming free, may be regarded in a favourable light; on the contrary, intense local pain, great emaciation, sympathetic fever, the disorder having been induced by a diseased state of the liver or other abdominal viscera, are to be looked upon as very unfavourable circumstances. Dropsy of the encysted kind generally terminates, sooner or later, in the destruction of the patient.

The usual appearances to be observed in dissections of those who have died of ascites, are as follow:—We observe a large quantity of fluid effused in the cavity of the abdomen, which for the most part is serous, but it now and then presents material differences both in colour and consistence, and we frequently notice flakes of coagulable lymph floating in it. In some cases, the water, instead of being collected in the general cavity of the

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* These remarks are taken from Dr. Cullen's First Lines of the Practice of Physic, as conveying a clear idea of the distinguishing signs between ascites and encysted dropsy.

abdomen in one large body, is lodged in distinct small cysts forming what are called hydatids. Besides the accumulation of water in the abdomen, we often find the liver swelled, hard, tuberculated, or gorged with blood, the spleen, pancreas, and mesenteric glands considerably enlarged, the stomach occasionally scirrhous, and the peritonæum, either generally or in patches, inflamed, thickened, studded with white elevated points, and sometimes in a state approaching very nearly to gangrene. Polypi are not unfrequently observed in the large blood vessels, as also ossifications in various parts of these organs.

In the treatment of ascites we are to attend to the following indications:—

1st, To evacuate the accumulated fluid; and,

2dly, To prevent any fresh collection.

To answer the first of these intentions, it has been customary to have recourse to purgatives of a drastic nature, or to diuretics, with the occasional use of emetics, in the same manner as has been fully noticed under the head of Anasarca; and to which I must beg leave to refer the reader, in order to save the trouble of recapitulation.

A singular method which has been recommended for procuring a discharge by urine in ascites, is by long-continued gentle friction of the abdomen with the fingers dipped in oil, which operation is to be repeated daily. The only effect to be derived from the oil appears to be that of preventing an excoriation of the skin.

We should give a fair trial to these remedies with the view of increasing the natural secretions, and particularly to diuretics; and where any particular one of this class does not promote an increased flow of urine, we ought to make trial of another.

If all means fail, and the pressure and tension of the abdomen become insupportable, or if we have reason to suspect the pressure of the water upon the kidneys prevents the diuretics from having a due effect on them, we must then resort to tapping. This mode of evacuating the water is undoubtedly the most ready, but it has no disposition to eradicate the disease. The operation is considered by some as not being likely to be attended with injurious consequences, and is by a few practitioners advised at the first step to be pursued; but as erysipelatous inflammation, terminating in gangrene, has not unfrequently arisen in the wound, it would seem best to make trial of other means before we have recourse to it. In drawing off the water, a proper degree of pressure should be made on the abdomen by means of a broad bandage, and this ought to be kept up for some time.

By giving a smart purgative of elaterium, combined with the supertartrate of potass (see Anasarca,) the day after the performance of the operation, when there is no great debility present, and repeating it two or three times, with an interval of a few days between each dose, I have, in a few instances, prevented any

fresh accumulation of the water, and in a great many, very much retarded it.

The re-accumulation is sometimes obviated by removing the causes which induced the disease, and by strengthening the tone of the parts in particular, and of the system in general. For instance, if the disease proceeds from chronic visceral obstruction, by mercurial friction over the abdomen, and an occasional drastic purgative, a scruple or half a drachm of the unguentum hydrargyri fort. may be rubbed in over the belly, until the mouth becomes slightly affected, while from one to two grains of elaterium may be given once or twice a week. Where the disease arises in weak delicate habits from debility, tonics, aromatics, and stimulants, combined with diuretics, as directed for anasarca, together with a nutritive diet, exercise, and pure air, will be most appropriate.

It has been mentioned that partial or encysted dropsy often takes place, and in a few instances the womb itself has been supposed to form the seat of collections of a watery fluid like other cavities of the body. Probably this never happens, however, except where the fluid is contained within white small bladders of various sizes, known by the name of hydatids. The appendages to the womb, or ovaria, are indeed very frequently the seat of dropsy, and the disease is met with at every period of life, but more frequently after puberty than before.

A dropsy of the ovarium is at first inconsiderable, and is attended with no very disagreeable symptoms. It increases gradually in bulk, and is originally confined to one side only, and more generally the left one. Until the tumour has acquired a considerable size, the patient's health suffers no very visible diminution; it then induces pain and numbness in the thigh corresponding with the side in which the swelling is situated, and by degrees the body becomes wasted, the appetite bad, and the strength greatly impaired.

The progress of the disease varies in different cases. In some, dangerous symptoms have ensued soon after the disorder became apparent, whilst others have laboured under it for a year or two previous to its destroying the patient. Nothing can be more uncertain than the progress and termination of the complaint; for experience has proved, that under the most apparently desperate circumstances the health has been in some measure restored, or life protracted for a considerable time, while on the other hand, where no urgent symptoms have been manifest, a sudden aggravation of the disease has occurred, and a rapid advance to a fatal termination has taken place.

Nothing satisfactorily can be offered respecting the causes of a dropsy of the ovarium, as women of every condition and age are found to be afflicted with it.

Dropsy of the ovarium is to be distinguished from ascites by attending to the symptoms which have been already enumerated under the head of the latter. Great caution will be requisite in not

mistaking pregnancy for this complaint, as fatal consequences might ensue therefrom. Fortunately the two are readily distinguished from each other.

Sometimes hydatids also form in the cavity of the abdomen, and not unfrequently on the surface of the liver; for an extraordinary case of which see Hepatitis. These to appearance consist of membranous bags, the coats of which are so thin as to be semi-transparent, and to have no visible muscular structure. From the effects produced by the different parts of these bags, while the animal is alive, being exactly similar to the contractions and relaxations of the muscular fibres in the human body, we have great reason to conclude, however, that these membranes are possessed of a similar power.

The hydatid, from its apparent want of muscles, and other parts which generally constitute an animal, was for a long time denied its place in the animal world, and considered as merely the production of disease: we are, however, at present in possession of a sufficient number of facts to ascertain, not only that it is an animal, but that it belongs to a genus of which there are different species.

Encysted dropsy of every kind is to be treated in the same manner as ascites. In that of the ovaria, every means which can promote general health, and an increased action of the kidneys, ought to be employed, as noticed under the head of Anasarca. In addition to tonics and diuretics, the bowels may be kept open by laxative salts, where costiveness prevails. While this plan is pursued, the belly should be firmly compressed by a flannel roller, or some proper bandage of a due length.

If the medicines fail in unloading the patient of the accumulated fluid, (which is the case in most instances,) and dyspnœa and the other symptoms become urgent, the water must be drawn off by tapping, still persevering in the use of the diuretic and tonic remedies. Most likely the water will accumulate again after a time; if so, the operation must be repeated; but in a few instances, it has not accumulated afresh. The fluid in a dropsical ovarium, however, is more frequently contained within hydatids than in a single sac, which may be known by the inequality of the tumour; but even in these cases tapping at any rate will afford a temporary relief.

In hydrocele, the point we wish to obtain is the obliteration of the cavity of the tunica vaginalis. To effect this, various methods have been proposed, such as excision, incision, seton, tent, caustic, and the injecting of vinous or other liquors, having previously discharged the water by a trocar.

This last method of treating the disease has been particularly recommended by Sir James Earle. It is, however, by no means a modern invention, as we find it advised by Monsieur Lambert in his Œuvres Chirurgicales, published near a century ago at Mar-

seilles. He used a strong solution of muriated mercury in lime-water, and enumerates many cases in which it proved successful. We are informed by Mr. Bell,* that in Scotland rectified spirit some time after this was employed for the same purpose, but that the violent pain and inflammation which it excited soon occasioned its being laid aside.

The injection employed by Sir James Earle is red wine, diluted with a fourth or fifth part of water. Notwithstanding what he has asserted on the subject, Mr. Bell affirms that it is not near so certain a remedy as either of the other ways, and that the pain which is saved in the operation is not worth consideration, when put in competition with the certainty of a cure. Besides the uncertainty of this, he enumerates the following objections:—The inflammation may sometimes rise to such a height as to produce suppuration within the cavity; when this happens, besides the pain and risk attending the inflammation, an incision equally extensive, for discharging the matter, will be necessary, as if the mode of cure by incision had been adopted at first. It does not admit of an examination of the testis with accuracy. The strength of the injection necessary for producing inflammation of the tunica vaginalis may be more than the testis can bear.

Under such a diversity of opinion, experience alone can determine at last in favour of one or other of the methods proposed, simple incision being that recommended by Mr. Bell.

HYDROCEPHALUS, OR WATER IN THE HEAD.

PYREXIA, violent and continued pain in the head, particularly across the brow, stupor, dilatation of the pupils, suffused redness of the eyes, great sensibility and aversion to light, suddenly interrupted sleep, with screaming, nausea, vomiting, and obstinate costiveness, together with the dejections glossy, and of a dark green colour when procured by medicines, the pulse at first preternaturally quick, afterwards becoming inordinately slow, and convulsions, are the pathognomic symptoms of this disease. One of the earliest criterions is the patient being uneasy on raising his head from the pillow, and wishing to lie down again immediately.

Hydrocephalus is almost peculiar to young children, being rarely known to extend beyond the age of twelve or fourteen, and it seems more frequently to arise in those of a scrofulous and ricketty habit than in others; or at least among those who have the peculiarities of skin, complexion, and features, which indicate scrofula. It is an affection which has been observed to pervade families, affecting all or the greater part of the children at a certain period

* See his Treatise on Hydrocele, and other Diseases of the Testis.

of their life; which seems to show, that in some cases it depends more on the general habit than on any local affection or accidental cause.

It is to be distinguished from apoplexy by its being attended with fever, and from simple typhus by the paroxysms being very irregular, with perfect intermissions, many times in a day. Whatever difficulties there may be in the early stage, particularly in infants, there is no disease more easily distinguished in the advanced stages than hydrocephalus; indeed, how can we mistake when we see a child rolling its head on the pillow, or perhaps sawing the air with one hand, while the opposite side is palsied; with a hectic on the cheek, his eyelids half concealing the pupil, and the eyes deprived of their vivacity by the filmy covering of the cornea; the complete dilatation of one or both pupils, and the suffusion of the adnata; drawing a long sigh; frequently grinding his teeth; quite incoherent, or in a state of complete insensibility; with a burning fever on the skin, or sweat forced from every pore: and all these symptoms alternating with, and at last finished by, a palpitating breathing and violent convulsions?*

The disease has generally been supposed to arise in consequence either of an immediate affection of the sensorium, from some general disease, as fever, or of injuries done to the brain itself, by blows, falls, &c.; from scirrhous tumours or excrescences within the skull; from original laxity or weakness in the brain, or from the brain morbidly sympathizing with a distant part. There is, however, reason to believe, that the disease, in by far the greater number of cases, owes its origin to a degree of inflammation in the membranes of the brain, which produces a morbid accumulation of blood, and generally an extravasation of watery fluid before death. Nosologists have been accustomed to place hydrocephalus among dropsies, and I have followed their example, although it ought to stand, I think, among the diseases connected with inflammation.

Its first stage is phrenitis, or inflammation of the brain; and the effusion of water which afterwards takes place between its membranes, or in the cavities of the ventricles, is the consequence.

In many cases of hydrocephalus, the affection of the brain has been considered by a few writers† as only secondary, and depending on a primary diseased state of the digestive organs.

No doubt the first disorders often take place in the abdomen, and the greater determination of blood to the brain is the result: yet numerous anatomical dissections have convinced me, that in the greater number of cases the morbid appearances of the abdomen are secondary symptoms of the affection of the head.

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* See Essay on Hydrocephalus Acutus, by J. Cheyne, M.D.

† Ibid.—See Dr. Yeat's Letter to Dr. Wall on the Disease termed Water in the Brain.

With respect to its proximate cause, very opposite opinions are still entertained by medical writers; which, in conjunction with the equivocal nature of its symptoms, prove a source of considerable embarrassment to the young practitioner.

Dr. Beddoes says, he believes it to belong to inflammations, and that at an early period he should be inclined to bleed as largely as in pneumonia.

Dr. Withering observes, that in a great many cases, if not in all, congestion and slight inflammation are the precursors to the aqueous accumulation.

Dr. Rush thinks, that instead of its being considered an idiopathic dropsy, it should be regarded only as an effect of a primary inflammation, or congestion of blood in the brain. It appears (he says) that the disease in its first stage is the effect of causes which produce a less degree of that inflammation which constitutes phrenitis; and that its second stage is a less degree of that effusion which produces serous apoplexy in adults. The former partakes of the nature of the chronic inflammation of Dr. Cullen and the asthenic inflammation of Dr. Brown.

There are others, again, who view the subject in a very different light. Dr. Darwin supposes inactivity or torpor of the absorbent vessels of the brain to be the cause of hydrocephalus internus; but he confesses, in another part of his work, that the torpor of the absorbent vessels may often exist as a secondary effect.

Dr. Whytt, who has published an ingenious treatise on the disease, observes, the immediate cause of every kind of dropsy is the same; viz. such a state of the parts as makes the exhalant arteries throw out a greater quantity of fluids than the absorbents can take up. From what he afterwards mentions, he evidently considers this state as consisting in debility.

As many cases are accompanied with an increased or inflammatory action of the vessels of the brain, and others again are observed to prevail along with general anasarca, it seems rational to allow that hydrocephalus is in most instances the consequence of congestion or slight inflammation in the brain or its membranes, and that in a few it arises either from general debility or topical laxity. In children labouring under extreme debility, the vessels of the brain, in common with those of the body in general, become greatly relaxed, and in this state effusion into the ventricles may, and no doubt does, sometimes take place. In admitting these as incontrovertible facts, I am at the same time induced to suppose that the cases of its occurring from mere debility are rare.

The great analogy subsisting between the symptoms which are characteristic of inflammation, and those which form the first stage of the acute species of hydrocephalus (for the disease has been divided into the chronic and acute by some writers), together with the good effects often consequent on blood-letting, and the inflammatory appearance which the blood frequently exhibits, seem to

point out strong proofs of the disease being, in most instances, an active inflammation, and that it rarely occurs from mere debility as a primary cause.

The progress of the disorder has by some been divided into three stages.

When it is accompanied by an increased or inflammatory action of the brain, its first stage is marked with many of the symptoms of pyrexia, such as languor, inactivity, loss of appetite, nausea, vomiting, parched tongue, hot dry skin, flushing of the face, headach, throbbing of the temporal arteries, quickened pulse, aversion to light and sounds, and watching; which symptoms always suffer an exacerbation in the evening, but towards morning become milder.

Many of these appearances are not observable when no inflammatory action of the brain is discernible. In these cases the countenance of the child is strongly expressive of distress and suffering, its temper is irritable and fractious, it has a great propensity to bed and a recumbent position, has pains over the eyes, with an aversion to being moved, and as the disease advances, it rolls its head from side to side, or throws its arms over it. It often sighs, and its breathing is extremely irregular, particularly when asleep. It is averse to take any thing, either liquid or solid, especially the latter; and apparently it suffers from constant nausea, but what is thrown up consists merely of the food and drink which have been taken. The urine has nothing remarkable in its appearance; but it is retained longer than usual: great costiveness prevails, and no stool is voided without the aid of purgatives, either given by the mouth, or thrown up as clysters; and in general the most powerful medicines of this class are requisite to produce the desired effect. Motions, when obtained, are commonly of a dark green colour, with an oiliness or glossy bile, rather than the slime which accompanies worms; and their smell is more of a cadaverous nature than that arising from feculent matter. The disease at length makes a remarkable transition, denoting the commencement of the second stage. The child screams frequently, and without being able to assign any cause; its sleep is much disturbed; there is a considerable dilatation of the pupils of the eyes, which do not contract on being exposed to light; the pulse becomes slow and unequal, and perhaps lethargic torpor, or double vision ensues.

In the third stage the pulse returns again to the febrile state, becoming uncommonly quick and variable, and coma, with squinting and convulsions, succeed. When the accumulation of water is very great, and the child young, the sutures recede a considerable way from each other, and the head, towards the end, becomes much enlarged.

We are not however to expect that these stages will follow each other in all cases in a regular and increased progress; for

a child has sometimes appeared in health on the very night on which it was seized with convulsions by which it was destroyed a few days afterwards.

The disease commonly terminates in three weeks from the date of the first symptom; but in some instances its termination is extended to four, five, or six weeks. Like every disease of the brain, its duration is, however, uncertain; for in some cases it has run its course in a few days.

When recoveries have actually been effected in hydrocephalus, after effusion has taken place, we ought probably to attribute more to the efforts of nature than to the interference of art; but by an early recourse to antiphlogistic means, during the inflammatory stage, we may sometimes succeed in removing the disorder. It is indeed only in this stage that remedies are likely to prove successful. In most instances it is to be regarded as of difficult cure; but the chance of this is nearly in proportion to the duration of the symptoms.

When the patient cannot bear to be raised up in bed without great uneasiness, it is a bad symptom. So is deafness, which there is reason to believe is now and then mistaken for stupor. When the dilatation of the pupil of either eye or squinting is very apparent, or the pupils of both eyes are much dilated, a fatal termination is denoted. Apoplectic stertor, coma, with loss of sight, great enlargement of the head, difficult respiration, a weak intermitting pulse, and involuntary evacuations, are also very unfavourable symptoms.

Hydrocephalus is a disease which is most frequent in families where the strumous constitution may be recognised, and many children of the same family in some instances fall under it, each about the same age, but nothing like a scrofulous condition in the diseased parts is ever to be perceived on dissection.

An accumulation of water in the ventricles of the brain is one of the most common appearances to be observed on those occasions. In different cases this is accumulated in greater or less quantities. It sometimes amounts only to a few ounces, and occasionally to some pints. When the quantity of water is considerable, the fornix is raised at its anterior extremity in consequence of its accumulation, and an immediate opening or communication is thereby formed between the lateral ventricles. The water is of a purer colour and more limpid than what is found in the dropsy of the thorax or abdomen. It appears, however, to be generally of the same nature with the water that is accumulated in these cavities. In some instances the water in hydrocephalus contains a very small proportion of coagulable matter, and in others it is entirely free from it.

When the water is accumulated to a very large quantity in the ventricles, the substance of the brain appears to be a sort of pulpy bag, containing a fluid. The skull upon such occasions is very

much enlarged in size, and altered in its shape, and it appears exceedingly large in proportion to the face. On removing the scalp the bones are found to be very thin, and there are frequently broad spots of membrane in them. These appearances are however only to be observed where the disease has been of long continuance.

In some cases where the quantity of water collected is not great, the substance of the brain has appeared to be indurated, and in others softened. We frequently find within the cranium the veins, particularly those of the membranes on the surface of the brain and lining of the ventricles, gorged with dark blood; sometimes considerable adhesions between thickening of the membranes and minute and florid vessels upon the pia mater: collections also of a viscid tenacious matter have been discovered in cysts upon its external surface, and tumours have been found attached to its substance.

Dr. Rowley was of opinion, that there exists a species of hydrocephalus where the water is collected between the tunica arachnoides and the pia mater, without any effusion in the ventricles of the brain;* but no such morbid appearances have ever, I believe, been discovered on dissection.

The treatment to be adopted in the first stage of this disease should vary according to the symptoms which are present. If it is marked by an increased or inflammatory action in the vessels of the brain, which is usually the case, we should by all means recommend bleeding, and this at the first onset of the disease; for when our fears, as to the real nature of the complaint, are awakened, not a minute should be lost in prescribing the remedies from which benefit is to be expected. The necessity of blood-letting in such cases seems very obvious, and it ought to be carried to such an extent as to answer a determinate end, viz. that of lessening topical congestion, and diminishing arterial action. Opening the jugular vein will be the most advisable way of drawing off blood in these cases; and on the succeeding day we ought to have recourse to the application of three, four, or more leeches to each temple, or to cupping, with previous scarification, which may, probably, be preferable to the application of leeches, both on account of the promptness with which the blood can be drawn, and the greater certainty of obtaining the quantity desired. It may be performed on the scalp, or behind the ears, or the nape of the neck, or between the shoulders. To trust wholly to leeches without general bleeding, is only tampering with a most formidable disorder.

In abstracting blood from infants a due consideration must be paid to their age. The repetition of both general and topical bleeding should depend on the appearance the disease exhibits; and as long as it is marked by an inflammatory action in the vessels

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* See his Treatise on the Membranous Dropsy of the Brain.

of the brain, or shows symptoms of local congestion, these operations ought to be repeated from time to time, but more particularly the local detraction of blood, from the consideration that the activity in the extreme vessels, giving rise to the effusion, is somewhat independent of the action of the heart.

When the disease seems to have arisen from topical weakness or general debility (which, as before observed, does not often happen), and is of course unaccompanied by any febrile symptoms; or when it has arisen from a family constitution, or as a consequence of scarlatina, which sometimes occurs, or is advanced into its third stage, bleeding would be improper.

Purgatives, by lessening the determination to the head, will be necessary where the symptoms point out an increased or inflammatory action in the vessels of the brain. They will likewise be proper where there is foulness of the bowels, indicated by the stools being either of a cadaverous smell, or dark and slimy. After bleeding they ought to be resorted to immediately. Jalap combined with the submuriate of mercury, or the supertartrate of potass with gamboge or scammony, as advised under the head of Anasarca, may be taken in doses proportionate to the age of the child, and be repeated occasionally so as freely to empty the bowels.

In every stage of the disease, and let the cause have been what it may, blisters appear to be highly advisable, from the great discharge which they occasion from the vessels of the head; and with this view we may apply a cap blister over the whole head, keeping up a copious discharge from it as long as we can. When it heals, fresh ones may be put on the forehead, occiput, and sides of the head in succession. Of late it has been recommended to apply them in the course of the sutures, and to keep up a discharge by means of an issue; but as the ceratum cantharidis is capable of exciting a proper discharging surface, it appears preferable, its application being much less troublesome than that of an issue.

The ceratum sabinæ is now and then employed for the purpose of keeping up a proper irritation. Some recommend the blistered parts to be dressed with mercurial ointment.

The application of caustic to the bregma is preferred by a late writer* on hydrocephalus to blisters; and as it is a more powerful stimulus and more permanent in its effects, it may probably be more useful. The caustic usually employed by him was the lunar, reduced to a powder, put on the surface of any adhesive plaster, spread on strong leather, of the size and shape of an elongated half-crown, and renewed every twelve hours, until it produces a sufficient eschar, destroying the skin of the part; after which a suppuration and separation of the eschar is promoted by the usual surgical dressings.

Cold applications to the head, after it has been shaved, such as

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* See Treatise on Hydrocephalus, by J. Carmichael Smyth, M. D.

iced water, or linen cloths wetted in æther and water, or vinegar and water, and renewed as often as they become warm and dry, have been recommended by some practitioners at the onset of the disease. That they may not interfere with blistering, we ought, in having recourse to them, to apply the blister to the nape of the neck, or between the shoulders.

Where much thirst with universal heat prevails, we may give small doses of antimonials, as advised under the head of Simple Fever, together with refrigerants, such as the nitrate of potass and the saline medicine.

Such is the plan of treatment to be adopted when the disease has not run on to the second stage, so as to produce an effusion of water, the natural consequence of inflammation in the cavities of the body.

In the second stage, when effusion has taken place in the cavities of the skull, it will be requisite to produce such an excitement of the vessels of the brain as may be likely to occasion a re-absorption of the fluid. With this view mercury, both internally exhibited and externally applied, is usually employed; but it is very doubtful if mercurial frictions are attended with any benefit. The internal use of mercury has been regarded by some physicians as a specific in hydrocephalus; and some cases which occurred in the practice of Dr. Percival and Dr. Dobson are said to have been cured by it; but experience has convinced me and many others, that when administered alone, or uncombined with other medicines, it more frequently fails than succeeds.

A combination of the submuriate of mercury joined with a few grains of jalap, in doses proportionable to the age of the child, and administered so as to procure daily a copious discharge of green mucous stools, seems in my opinion to promise fairer for success than giving it alone so as to excite what is called a mercurial action in the system.

The submuriate of mercury combined with the pulvis antimonialis, is a medicine which is reported* to have been given with much advantage in several cases of this disease.

A combination of mercury with fresh squill having been employed by Dr. Carmichael Smyth in hydro-thorax with a happy effect, he has been induced to recommend it in hydrocephalus.†

The foxglove has been suggested as a remedy in hydrocephalus; but it has not yet received the sanction of experience. To what particular state of the disease it may be adapted, whether it might relieve by diminishing arterial action, or by its power as a diuretic, on the same principle that it succeeds in the cure of dropsy, is uncertain, and only to be ascertained by further trials and observation. Its exhibition in any of the forms advised under the heads of Phthisis and Anasarca, with the external application of about

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* See Dublin Med. and Physical Essays.

† See his Treatise on Dropsy of the Brain.

half a drachm of unguentum hydrargyr. fort. might probably be attended with good effects, when either remedy given separately may fail.

The best way of administering it will be, to begin with a moderate dose (eight or ten drops of the saturated tincture,) and to every succeeding dose, which may be given at an interval of six hours, an addition of two or three drops may be made, so that in a day or two the system will be affected. We should proceed with caution, ascertaining, while augmenting it, the effect of the medicine after each increased dose.

A discharge from the nose ought at the same time to be promoted, by causing the patient to snuff up the powder of asarabacca, white hellebore, or the like.*

The erect posture is requisite throughout the disease as much as possible; but when the little patient is in bed, his head should be raised considerably by pillows, stuffed with horsehair or chaff to avoid warmth.

Very slight electric shocks passed through the head twice a day, have been found useful in some cases which were thought to depend on debility.

It has been proposed as a query, Whether frequent vomiting might not be likely in hydrocephalus, as well as in anasarca and ascites, to act powerfully in promoting an absorption of the fluids? In all cases of encysted dropsy I should apprehend that but little advantage was likely to be derived from the action of emetics, but more particularly in that of the head.

After the declination of the disease, every means of supporting the child's strength are to be embraced, which is to be done by tonics, as recommended for the cure of anasarca, soups, animal jellies, and even wine, together with pure air and proper exercise.

It has been ascertained, by experiment, that the brain of a sheep may be punctured with impunity in cases of hydrocephalus, so as to allow the escape of the serous fluid dilating the ventricles.† Where the symptoms are such as to render the fact of the collection of water unequivocal in the human subject, and where death must *inevitably* follow unless the ventricles can be unloaded,

† See London Medical Repository, vol. iv. p. 369.

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* 1. ℞ Foliar. Exsiccat. Asari,
——————— Majoranæ,
———————Mari Syriaci,
Florum Exsiccat. Lavand. āā ℥ss.

Simul in pulverem tere. Fiat pulv. sternutatorius.

Vel,

2. ℞ Pulv. Sacchar. Alb. gr. x.
—— Veratri Rad. gr. iv. M.

* 1. Take Dry Leaves of Asarabacca,
——————— Sweet Marjoram,
——————— Germander,
Dry Lavender Flowers, of each half an ounce.

Reduce them to powder, and let it be used as an errhine.

Or,

2. Take White Sugar in Powder, ten grains.
—— Hellebore, powered, four grains.

Mix them.

Query, would it not be justifiable to apply the trephine, and afterwards puncture the ventricles? Hippocrates, indeed, suggested the use of the trepan in this disease; and a few cases are on record of the external form of the disease, or that in which the water is not confined within the ventricles, being cured by puncture after the application of the trephine.*

A very interesting case of hydrocephalus in a female child, aged six months, was lately submitted to my inspection and that of the other physicians of this city (Salisbury,) by Mr. William Coates, surgeon; wherein the operation of paracentesis was performed sixteen different times, during which the quantity of fluid drawn off from the head, and what afterwards escaped from the wounds, amounted to 323 ounces. The water was evidently accumulated on the surface of the brain, although most likely there was also a small quantity in the ventricles; and was evacuated by means of a small trocar, the external integuments having been each time previously punctured with a lancet. The dimensions of the child's head prior to the first operation, were as follow :—

Fronti-occipital circumference, 30 inches.
From ear to ear, across the vertex, 21½ do.
Round the chin, and across the vertex, 28 do.

About 20 ounces of fluid were drawn off and escaped at each operation, which was repeated at intervals of about ten or twelve days, and this the child seemed to bear very well; but dentition coming on, and a convulsive fit or two arising in consequence thereof, it was removed by its mother into the country, since which I have learned nothing further concerning it; but as the fluid always accumulated afresh, the termination of the disease no doubt will be a fatal one.

HYDRO-THORAX, OR DROPSY OF THE CHEST.

OPPRESSION of breathing, particularly on motion, and when in a horizontal posture, difficulty of lying on the side where effusion does not exist, sudden startings from sleep, with anxiety, and palpitations at the heart, irregularity of the pulse, cough, occasional syncope, paleness of visage, anasarcous swellings of the lower extremities, thirst, and a diminution of urine, which is high-coloured, and on cooling deposits a pink or red sediment, are the characteristic symptoms of hydro-thorax; but the one which is more decisive than all the rest, is a sensation of water being perceived in the chest by the patient on certain motions of the body, or as if the heart were moving in a fluid.

By percussion with the hand upon the chest, when the patient is in an erect position, and also by pressure upon the abdomen, which considerably aggravates the sense of suffocation for the moment, as well as the other symptoms which attend on hydro-

* See Medico-Chirurgical Transactions, vol. ix. part 2d.

thorax, we may be able in many cases clearly to ascertain the accumulation of water in the chest. The former is strongly recommended as a test by Corvisart, and the latter by Bichat, both of them being men of eminence. By combining both means, we may in all probability be able to determine more decisively than by adopting either singly.

The diseases with which hydro-thorax is most likely to be confounded are, empyema, angina pectoris, asthma, and organic affections of the heart, or aneurismal dilatations of the large vessels connected with it; but by a close attention to the symptoms which have been pointed out under these heads, we shall be able to distinguish between them with tolerable accuracy.

The causes which give rise to the disease are pretty much the same with those which are productive of the other species of dropsy. In some cases it exists without any other kind of dropsical affection being present, but it prevails very often as a part of more universal dropsy.

Hydro-thorax is frequently a disease of advanced life, and, like other dropsical affections, it often succeeds debility, however induced. It is, however, the consequence now and then of previous inflammation in the thorax. It chiefly attacks males who have addicted themselves to free living, especially to potations of any intoxicating liquor. Such as have long suffered from gout and asthma are peculiarly liable to it.

It frequently takes place to a considerable degree before it becomes very perceptible; and its presence is not readily known, the symptoms, like those of hydrocephalus, not being always very distinct. In some instances the water is collected in both sacs of the pleura, but at other times it is only in one. Sometimes it is lodged in the pericardium alone; but for the most part it only appears there when at the same time a collection is present in one or both cavities of the thorax. Sometimes the water is effused in the cellular texture of the lungs, without any being deposited in the cavity of the thorax. In a few cases the water that is collected is enveloped in small cysts of a membranous nature, known by the name of hydatids, which seem to float in the cavity; but more frequently they are connected with, and attached to, particular parts of the internal surface of the pleura.

Hydro-thorax often comes on with a sense of uneasiness at the lower end of the sternum, accompanied by a difficulty of breathing, which is much increased by any exertion or motion, and which is always most considerable during night, when the body is in a horizontal posture. Along with these symptoms there is a cough that is at first dry, but which, after a time, is attended with an expectoration of thin mucus. There is likewise a paleness of the complexion, and an anasarcous swelling of the feet and legs, together with a considerable degree of thirst and a diminished flow of urine; occasionally the face swells and pits upon pressure, especially in the morning; and these signs of disease are accom-

panied by debility and loss of flesh. Under these appearances we have just ground to suspect that there is a collection of water in the chest. The symptoms which have been described gradually increase, but their progress is slow, and a considerable time elapses before the disorder is fully formed.

The difficulty of breathing at length becomes excessive. The patient can seldom remain in a recumbent posture for any time, and the head and upper part of the trunk must be supported almost erect. The sleep is frequently interrupted on a sudden by alarming dreams, out of which the patient quickly starts up in bed, with a sense of impending suffocation. Convulsive efforts of the muscles subservient to respiration, resembling an attack of spasmodic asthma, with violent palpitations of the heart, generally accompany the paroxysms, which are also frequently excited by the most trifling voluntary motion, or by a fit of coughing.

When afflicted with these distressing symptoms, the patient is under the necessity of continuing erect, with his mouth open, and he betrays the utmost anxiety for fresh air. His face and extremities are cold: the pulse, with little exception, is feeble, irregular, and intermits in a degree seldom experienced in other disorders, and a pain or sensation of numbness frequently extends itself from the heart towards the insertion of the deltoid muscle of one or both arms. Excepting a livid hue of the lips and cheeks, the countenance is pale, and indicates a peculiar anxiety and ghastliness of appearance, and, together with the upper parts of the body, is usually covered with a profuse clammy sweat. Drowsiness, coma, or delirium, occasioned by the difficult transmission of the blood through the lungs and want of sleep, frequently attend the latter periods of hydro-thorax, and from the same cause the expectoration is sometimes bloody. Now and then a sensation of water floating about can be distinctly perceived by the patient, on any sudden change of posture.

No person has yet been able to point out the individual signs by which we can with certainty ascertain in which cavity of the chest the water is lodged, but some ingenious observations or data on this head have been offered by a late writer* on hydro-thorax.

Our prognostic in hydro-thorax must in general be unfavourable, as it has not been often cured, and in many cases will hardly admit even of alleviation, the difficulty of breathing continuing to increase, until the action of the lungs is at last entirely impeded by the quantity of water deposited in the chest. In some cases the event is suddenly fatal, but in others it is preceded, for a few days previous to death, by a spitting of blood. Now and then hydro-thorax ends in general dropsy, by which it is indeed sometimes accompanied from the beginning. But it more commonly impedes

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* See Dr. L. Maclean's Inquiry into the Nature, Causes, and Cure of this Disease, p. 63.

the action of the heart or lungs before universal dropsy has taken place, and destroys the patient apparently by suffocation in consequence of the increased pressure of the accumulated fluid on the lungs, or by apoplexy from pressure of the dark venous blood on the brain, not unfrequently accompanied with serous effusion, either on its surface or in its ventricles.

Dissections of this disease show that in some cases the water is either collected in one side of the thorax, or that there are hydatids formed in some particular part of it; but they more frequently discover water in both sides of the chest, accompanied by a collection in the cellular texture and principal cavities of the body. The fluid is usually of a yellowish colour, possesses properties similar to serum, and, with respect to its quantity, varies very much, being from a few ounces to several quarts. According to the quanty, so are the lungs compressed by it; and where it is very considerable, they are usually found much reduced in size. When universal anasarca has preceded the collection in the chest, it is no uncommon occurrence to find some of the abdominal viscera in a scirrhous state.

The treatment of hydro-thorax is to be conducted on the same general plan with that of anasarca; viz. by emetics, purgatives, and diuretics. With respect to emetics, they do not seem, however, well calculated to afford any considerable degree of relief; and as the great desideratum in the cure of this disease is to evacuate the water without increasing the weakness still farther, purgatives, particularly those of a drastic nature, such as scammony, gamboge, &c., are not advisable. If the bowels are confined at any time, aperients of the saline class may be given from time to time, as the occasion may require. Possibly a combination of potassæ supertartras and hydrargyri submurias* taken at night, with something of a more active nature† in a liquid form the following morning, if necessary, would produce very beneficial effects.

The medicines most to be relied upon in hydro-thorax are diuretics; and that which formerly was chiefly employed in this species of dropsy is the squill, because, besides its diuretic effect, it possesses that of promoting an evacuation from the

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* 1. ℞ Potassæ Supertartrat. gr. x.—xx.
Hydrargyri Submur. gr. ij.—iv.
Pulv. Zingib. gr. v.
Syrup. Simpl. q. s. M.
ft. Bolus, horâ decubitûs sumendus.

† 2. ℞ Infus. Sennæ Compos. f. ℥x.
Potassæ Tartrat. ℥j.
Tinct. Jalapæ, f. ℥ij.
Syrup. Rhamni, f. ℥j. M.
ft. Haustus, primo mane adhibendus, si opus fuerit.

* 1. Take Supertartrate of Potass, from ten to twenty grains.
Submuriate of Mercury, from two to four grains.
Powdered Ginger, five grains.
Syrup, a sufficiency to form a bolus, which may be given on going to bed.

† 2. Take Compound Infusion of Senna, ten drachms.
Tartrate of Potass, one drachm.
Tincture of Jalap, two drachms.
Syrup of Buckthorn, one drachm.
Mix them, and let this draught be taken in the morning, if necessary.

glands of the lungs: in administering it, we should push it to as large a quantity as the stomach will bear without exciting nausea. Any of the forms recommended under the head of Anasarca may be prescribed; and besides the powder, we may try either the oxymel, vinegar, or tincture; indeed, the ingredients with which the squill is combined in the two former may, perhaps, add to its virtues.

If after a sufficient length of time we should fail to procure any good effects from a use of the squill, we ought then to make trial of the digitalis, as advised under the above head and that of Phthisis.

Dr. Maclean offers it as his opinion,* that digitalis exerts no diuretic operation on the urinary organs, but that as a successful agent in dropsy, its effects are confined to the absorbents, and probably in a certain degree extended to the exhalants. When it increases the urinary secretion with promptness in dropsy, he thinks it may be attributed wholly to its restoring the impaired or lost function of the absorbing lymphatics, and probably by lessening serous effusion at the same time.

In administering digitalis, the principal circumstances to be regarded are, the age, strength, peculiar habit of the patient, stage of the disease, and degree of urgency of the symptoms. If the disease be far advanced, and immediate danger is indicated, the dose should be such as to produce a speedy effect. In general a grain of the powder, or an ounce of the infusion,† taken three times a day, viz. morning, noon, and night, may be regarded as a full dose for an adult of moderate strength. If the herb be in perfect preservation, and genuine, the habit will most likely feel the influence of this quantity in a few days. In female constitutions, or in males whose strength has been much reduced, this quantity should not be given oftener than twice in the day (evening and morning,) and in young subjects the dose ought to be reduced still farther in proportion to the age. Perhaps it would be best not to continue the use of digitalis for any length of time, but to stop for certain short inter-

* See pp. 158 and 160 of his Inquiry into the Nature, &c., of Hydro-thorax.

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† 3. ℞ Fol. Digit. Purp. contus. ʒiss.
Canel. Alb. contus. ℈j.
Aq Fervent. f. ℥viij.
Infunde per horas quatuor in vase operto, dein liquorem effunde.
ft. Infusum.

Vel,

4. ℞ Infusi Digitalis Purp. f. ℥ss.—℥j.
Aq. Menth. Pip. f. ʒiij.
Potassæ Acetat. gr. xv.
Spirit. Æther. Nitrici, f. ʒi. M.
ft. Haustus, bis terve de die capiendus.

† 3. Take Leaves of Purple Foxglove, bruised, a drachm and a half.
Canella Bark, bruised, one scruple.
Boiling Water, eight ounces.
Let them infuse for four hours in a covered vessel, then strain off the liquor for use.

Or,

4. Take of the Infusion of Foxglove, from half an ounce to one ounce.
Peppermint Water, three drachms.
Acetate of Potass, fifteen grains.
Spirit of Nitric Æther, one drachm.
Mix them, and let this draught be taken twice or thrice a day.

vals, as we shall thereby guard against its producing any deleterious effects, and prevent its disordering the stomach, or habit at large. During a course of this medicine, the state of the pulse, the stomach, the bowels, and sensorial functions, ought to be watched attentively.

If it acts powerfully on the bowels, and produces either pain, griping, or a number of copious watery evacuations following one another in quick succession, attended with extreme faintness, languor, and prostration of strength, its use must be discontinued for a day or two, and from ten to fifteen drops of the tincture of opium be given in some cordial water, repeating this dose at proper intervals, according to the frequency of the evacuations and the consequent debility. A lax state of the bowels has, however, been observed to be very favourable to the successful exhibition of digitalis and other diuretic medicines.

When foxglove disorders the stomach, and in consequence of its unguarded or injudicious use, produces alarming symptoms, frequent doses of the confectio opii in small bulk, as in that of a pill, with warm cordials in very small quantity, (so the stomach immediately rejects every thing in large draughts,) warm volatile anodyne embrocations to the epigastrium, and spirituous fomentations to the feet, will be found in general effectual means. If the stomach rejects every thing, rich broth clysters in small quantity, with from 80 to 150 drops of tinctura opii, may be thrown up, and repeated according to circumstances.

When, after a fair trial of both squill and digitalis, the flow of urine is not increased, although these medicines have been employed in augmented doses, we must have recourse to diuretics of another class, such as the saline. Those in ordinary use are the potassæ subcarbonas, potassæ acetas, broom-ashes, and potassæ supertartras: the latter having been much used of late years, and frequently with great success, in several species of dropsy.—(See Anasarca.) We may give this drug either by itself, or combine it with squill and digitalis,* small doses of elaterium, or with the other diuretics noticed under the head just referred to.

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* 5. ℞ Fol. Digital. Purp. Exsiccat. Pulv. gr. vj.
Potassæ Supertartrat. ʒvj.
Pulv. Cinnam. Comp. ℈j M.
ft. Pulv in chartulas vj. distribuend. quarum unam dosem sumat bis terve de die ex Infusi Baccarum Juniperi cyatho.

Vel,

6. ℞ Pulv. Digitalis Purp.
—— Scillæ, āā gr ix.
Extract. Gentian. ℈j.
Ol. Junip. ♏ viij.
Syrup. Simpl. q. s. M.

* 5. Take Powder of Foxglove, six grains.
Supertartrate of Potass, six drachms.
Compound Powder of Cinnamon, one scruple.
Mix them, and divide them into six papers, of which take one dose twice or thrice a day, mixed in a small tea-cupful of an Infusion of Juniper Berries.

Or,

6. Take Powder of Foxglove,
—— Squill, of each nine grains.
Extract of Gentian, one scruple.
Oil of Juniper, twelve drops.
Syrup, a sufficiency to form the

At the same time that we have recourse to these means, we should apply blisters to the chest, shifting them from one side of it to the other, whenever they show a disposition to heal up; to prevent which they ought to be dressed with some kind of stimulating ointment, such as the ceratum sabinæ.

The breathing will not only be somewhat relieved by the frequent application of a blister, but the irritation excited by it in the urinary passages may possibly tend to facilitate the operation of the diuretic medicines.

Where hydro-thorax is complicated with convulsive breathing, resembling the common periodic asthma, it may be relieved by giving a grain of opium every hour for two or three doses, with about a drachm of æther in cold water; continuing the digitalis as before recommended.

When the accompanying cough is so urgent as to prevent sleep and aggravate every other symptom, as sometimes happens, opiates combined with squills and other expectorants may be administered.

If the patient is far advanced in life and his strength much exhausted, or if the disease has been of any standing and considerable debility has ensued, it will be necessary to administer tonics, combined with diuretics, as recommended in the treatment of anasarca, or as prescribed below.* For preventing farther accumu-

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ft. Massa in pilulas xij. distribuenda, quarum unam capiat ter de die cum haustu sequenti.

7. ℞ Potassæ Supertart. ʒ.—ʒij.

Aq. Fervent. f. ℥iss.
Spirit. Junip. Comp. f. ʒij.

Tinct. Cinnam. C. f. ʒi. M.

ft. Haustus.

* 8. ℞ Myrrh. ℈ij.
Ferri Sulphat.
Potassæ Subcarbonat. āā ʒss.

Extract. Anthemidis, ℈j.

Syrup. Simpl. q. s. M.

ft. Pilulæ xxxvj. capiat ij. ter in die cum cochl. magnis duobus misturæ sequentis.

9. ℞ Infus. Gentian. Compos. f. ℥v.

Potassæ Acetat. ʒss.
Spirit. Junip. C.
——Armoraciæ, C. āā f. ℥ss.

——Æther. Nitric. f. ʒij. M.

ft. Mistura.

mass, which is to be divided into twelve pills, of which let one be taken thrice a-day with the following draught.

7. Take Supertartrate of Potass, from one to two drachms.
Warm water, one ounce and a half.
Compound Spirit of Juniper, two drachms.
——— Tincture of Cinnamon, one drachm.
Mix them.

* 8. Take Myrrh, two scruples.
Sulphate of Iron,
Subcarbonate of Potass, of each half a drachm.
Extract of Chamomile, one scruple.
Syrup, a sufficiency to form the mass. Divide this into thirty-six pills, and let two be taken three times a day, with two table-spoonsful of the following mixture.

9. Take Compound Infusion of Gentian, five ounces.
Acetate of Potass, half a drachm.
Compound Spirit of Juniper,
———————Horseradish, of each half an ounce.
Spirit of Nitric Æther, two drachms.
Mix them.

lation when the water has been removed, and giving strength and energy, they will also be proper.

In a letter from Mr. Barr, of Birmingham, to Dr. Beddoes,* we are informed of the happy effects which were derived in a case of hydro-thorax from the aid of pneumatic medicine in conjunction with other remedies, which of themselves had availed nothing.

He states, that his patient's face was become pale and emaciated, his eyes stared as if taking their last conscious view of objects; his legs were swelled to such a degree that the skin was become much inflamed, and in danger of bursting; he had a continued tenesmus, and made very little urine; he could not endure a horizontal posture for a moment, but was under the necessity of being bolstered upright in bed through the night: even then he slept little, and that little was disturbed and unrefreshing, for he frequently started from his sleep, under an impression of immediate suffocation.

One quart of oxygen, mixed with nineteen of atmospheric air, was directed to be inhaled every day; but as the symptoms were very urgent, it was thought right to join the use of those active medicines which had been prescribed for him before to no effect. He was ordered to take half a grain of digitalis in substance every evening, and four ounces of a decoction of the cortex cuspariæ in the course of each day.

On the third night after inspiring the factitious air he found himself more composed, he could remain longer in one posture, and the startings during sleep seemed both less frequent and less violent. Every night he was sensible of amendment; in ten days he could bear the removal of several of the pillows that bolstered him up in bed, and he could sleep for three or four hours without one starting fit. The swellings of his legs began now to subside, the tenesmus was entirely removed, the quantity of urine was considerably increased, and he could walk up stairs with much ease; his appetite and cheerfulness began to return, and the pale face of disease to give place to the florid countenance of health.

In the course of the second week the quantity of oxygen had gradually been increased to two quarts a day, diluted as before. In four weeks from the patient's beginning to inspire the vital air not a vestige of the disorder remained, except weakness; he could lay his head as low in bed as when in perfect health, and sleep the whole night; no swellings of the legs remained, no difficulty of breathing upon ordinary exertion, and every function was performed with regularity and ease. He discontinued the use of all medicines, except a laxative pill occasionally; and at the age of sixty seemed to possess uncommon strength, agility, and vivacity.

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* See his Considerations on the Medical Use and Production of Factitious Airs.

Such is the report made by Mr. Barr of the effects of vital air in hydro-thorax; which, from having proved so highly beneficial, we may employ as an auxiliary means.

That aliment which contains the greatest quantity of nutriment in the smallest bulk, and which requires, at the same time, the least effort of the digestive organs to convert into animal juices, reason and experience point out as the best in hydro-thorax. The food should be well masticated, and the free motion of the diaphragm never interrupted by a full meal. During a course of diuretic medicines the patient should drink freely of liquids, and particularly of such as are supposed to increase the flow of urine. —See Ascites.

If all our endeavours to carry of the water, or promote its re-absorption, prove fruitless, and a fluctuation is evidently perceptible, and particularly when lodged in the pericardium, we should then perform a paracentesis of the thorax. Where it is loose in the sacs of the pleura or in the pericardium, we may, with the assistance of diuretics joined with tonics, possibly effect a cure by means of this operation; but where it is accumulated in hydatids, or in the cellular texture surrounding the bronchiæ, we shall derive no advantage from it.

The practice of evacuating water contained in the thorax by an incision, is of as ancient a date as the days of Hippocrates. For the mode of performing the operation, I beg leave to refer to Mr. Bell's System of Surgery. In drawing off the water in hydro-pericardium and using the trephine, the instrument should be applied to the sternum between the fifth and sixth ribs.

Before the evacuation of the water in hydro-thorax, the patient's situation seldom admits of much bodily exertion. Somewhat, however, may be done by the frequent and diligent use of a flesh-brush, or by friction with flannel all over the body, but especially over the chest, and as near the seat of the complaint as possible. From the circulation of blood being very languid in the feet and legs, these parts are in general very cold, and ought therefore to be enveloped in worsted or fleecy hosiery stockings, being well rubbed every morning and night.

The great coldness of the bodies of dropsical subjects, and the total want of perspiration, evidently point out the necessity of warm clothing; and there are no cases in which a flannel covering will prove more beneficial, or more grateful to the sensations of the patient.

As soon as the evacuation of the water or the relief of urgent symptoms will permit, no day should elapse without the patient either walking, riding on horseback, or in an open carriage; for the frequent but gentle agitation of the body, and the moderate exertion of the muscles, together with the salutary influence of a pure healthy atmosphere, will assist greatly in giving tone, vigour, and energy to the whole frame. The lungs of some persons who labour under hydro-thorax are, however, extremely susceptible

of a cold frosty air; it being no sooner expired, than they are seized with a cough and wheezing, and experience a painful sense of constriction about the chest. Under such circumstances it will be better to keep within doors.

IV.—INTUMESCENTIÆ SOLIDÆ, OR SWELLINGS OF THE SOLID PARTS.

RACHITIS, OR RICKETS.

THE characteristic marks of this disease are, an uncommon size of the head, swelling of the joints, flattened ribs, incurvation of the spine, distortion of the cylindrical bones, protuberance of the belly, and general emaciation.

Rickets is an hereditary disease in some families, though parents that have been affected with it, have sometimes a healthy and robust offspring. In some instances, I think, it can be traced to a venereal taint, which, though not the immediate cause, is very often an exciting one of it and scrofula. At least, it is certain that syphilis, transmitted from parents to their children, appears in the latter in a manner very different from that in which the former are affected. We find that the children of the indigent and profligate are those most generally afflicted with rickets; but at the same time it must be allowed that there are many circumstances which conduce to this disease; such as a damp and cold residence, impure air, inattention to cleanliness, bad nursing, want of due exercise, a deficiency of food, and debility. Difficult dentition, and the pain and bowel complaints arising from it, may favour, in a powerful manner, the action of the exciting causes of rickets.

The proximate cause of the disease is now supposed to be a deficiency of the phosphate of lime or animal gluten in the bones; hence the latter are deprived of that necessary strength and solidity in consequence of the prevailing debility in the vessels, so that the former, instead of being conveyed to the bones, is deposited in other parts of the body. Thus we find particles of lime often evacuated in the urine of rickety children.

The disease seldom appears before the ninth month, and very rarely shows itself after the second year of a child's age. It is more frequently met with among the children of the poor than in those of higher rank, and seems to be almost solely confined to cold climates where much moisture prevails, which seems to indicate that a peculiar atmosphere has a great share in giving rise to it.

It usually comes on slowly, and the first appearances of it to be observed are, a flaccidity of the flesh, emaciation of the body, paleness, and loss of colour in the cheeks, if they have been rosy, and a slight degree of tumefaction of the face. The head at the same time appears large with respect to the body, and the sutures and fontanelle are preternaturally open. The head continuing to

increase in size, the forehead becomes at length unusually prominent, and the neck appears very slender in proportion to the head. Dentition is at the same time very slow, and much later than usual, and the teeth that do appear soon spoil, and are apt to fall out. The ribs lose their convexity, the sternum protrudes in the form of a ridge, the spine is incurvated, and the epiphyses at the several joints of the limbs become swelled, while at the same time the limbs between the joints appear to be more slender than before, and from their inability to support the weight of the body, become somewhat flexible, and at last much distorted.

With these symptoms the child experiences a great diminution of its strength, is averse to making the least exertion, and is unable to walk. Its appetite is not often much impaired, but its stools are usually frequent and loose, and its abdomen appears uncommonly full and tumid. With regard to its mental faculties, the understanding is most generally very mature, but in a few cases stupidity or fatuity ensues. At the commencement of the disease there is no fever present; but in its more advanced stage, a frequent pulse, with other febrile symptoms of a hectic nature, attend.

In some cases the disease proceeds no further, and the child gradually recovers its health and strength, the limbs being left however in a distorted state. In others it continues to increase, till at last every function of the animal economy becomes affected, and the tragic scene is closed by death.

Cretinism (which is to be met with very generally among the inhabitants of that part of Switzerland nearest to Italy, in the deepest valleys of the Alps, where the atmosphere is extremely humid, in consequence of numerous waterfalls and rivulets that emit powerful exhalations through the influence of the sun's heat, while they are secluded from the access of every drying wind,) is a disease which has been supposed to be only as high a degree of rachitis as human nature can possibly sustain.* This opinion is corroborated by an observation that the different stages or degrees of the evil correspond with the variations in the atmosphere. Those, for example, who inhabit the deepest and most recluse valleys are reduced to the lowest state of imbecility and idiotism; in those who are somewhat more elevated, the mental powers are not so completely obtunded; and others still more elevated, and of course less exposed to exhalations, will probably be deformed merely with wens or swellings about the joints, and other symptoms of rachitis. Those who are nearer to the summits are perfectly exempt from all these appearances.

Cretinism is, in many instances, connected with goître or bronchocele (see this disease). An enlargement of the thyroid gland is indeed a striking feature in the unsightly aspect of the Cretin.

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* See Dr. J. F. Akerman's Inquiry into the Causes of a Singular Deviation from the Human Species in the Alps.

but it is not a constant attendant: for Cretinism is frequently observed without any affection of the thyroid gland, and this gland is often much enlarged without any affection of the intellectual faculties.

The productions of Cretinism by the bad quality of the air and food, the neglect of moral education, and other evils attendant upon poverty and indigence, and the deformity becoming so general in those regions by a seclusion from the rest of mankind, and by perpetual intermarriages, is supported by facts so strong and pointed, that the greater number of cases in mountainous districts may safely be ascribed to these causes, instead of to the use of snow-water, as a few have supposed. That a use of snow-water produces either goître or Cretinism, is an absurd idea; for persons born and living in places contiguous to the Glaciers, who drink no other water than what flows from the melting of snow and ice, are not afflicted with these disorders, and they are observed frequently in places where snow is unknown.

The causes of Cretinism begin to operate upon the system soon after, and perhaps even before birth; the want of energy in the parent is communicated to the offspring, the children become deformed and cachectic very early in life, the growth and development of the body are impeded, the abdomen becomes enlarged, and the glands swelled in various degrees; moreover, the powers of the mind remain dormant, and are at length obliterated, partly from the want of proper organization, and partly from the total neglect of every thing like education.

The head of the Cretin is deformed, his stature diminutive, his complexion sickly, his countenance vacant and destitute of meaning, his lips and eyelids coarse and prominent, his skin wrinkled and pendulous, his muscles loose and flabby, and frequently he is affected with an enlargement of the thyroid gland, or goître, which greatly adds to his unsightly aspect. The qualities of his mind correspond to the deranged state of his body, and the disease prevails in all the intermediate degrees from excessive stupidity to complete fatuity.

Cretinism was observed in Chinese Tartary by Sir George Staunton, in a part of that country much resembling Savoy and Switzerland in its Alpine appearance. Dr. Abercrombie mentions,* that many cases of it are to be met with in the Pyrenees, and Les Cevennes of France.

A race of Cretins existing in the South of France has lately been presented to the notice of the profession† under the appellation of Cagotts. In that part of France this degraded race is widely extended: the individuals of it, deformed with bronchocele, have an indistinct articulation, an air of stupidity, a sallow complexion, and an extreme apathy to all external objects. The Cagotts

* See his Inaugural Dissertation on Alpine Idiotism.

† See the Translations of Travels in the Pyrenees, by Mons. Ramond.

are pretty much the same as the Cretins of the Alps; they both present the same degree of imbecility, the last remains of the intelligence of man, together with the last traces of the human form.

The rickets, although attended with much distortion of the bones, and various other unpleasant symptoms, very seldom proves fatal; and we are only to regard it as attended with danger where the distortion becomes so great as to affect the office of the lungs and other organs; or where the enlarged size of the head shows that it contains a considerable quantity of water within it; or where the food is passed unchanged by digestion, which denotes a highly diseased state of the mesenteric glands. Children at the breast are more exposed to peril than those that have reached three or four years.

Various morbid affections of the internal parts are to be observed on opening the bodies of those who have died of this disease. The brain has commonly been discovered in a flaccid state, with effusions of a serous fluid in its cavities. The lungs have been found in a morbid condition, seemingly from some inflammation that had come on towards the close of the disorder; the spleen and liver are flaccid and enlarged; the intestines are pale or rather whitish; all the lymphatic glands, especially those of the mesentery and bronchia, are enlarged, and the latter sometimes suppurated; the bones, reduced to a fibrous state, are flexible, bent in several directions, and easily cut. With respect to the muscular parts, they have been found very soft and tender, and the whole of the dead body without that degree of rigidity which is so common in almost all others.

Mons. Leveille has paid some attention to the structure of a soft rickety bone, and it is described* as having been exceeding light, yielding with facility to the scalpel, and presenting throughout a cellular and spongy texture. Concerning the condition of the bones in rickets, Bichat remarks, that in this disease the solid structure forming the walls of a long bone entirely disappears: the whole of its interior presents a homogeneous appearance and cellular texture throughout: the periosteum is much thickened. In some instances the bones in rickets have been observed† to be nearly of the consistence of common cartilage; have presented throughout an areolated texture, the cells being in some parts large, and containing a brown gelatinous substance.

In the cure of the rickets we should proceed on the plan of invigorating the system by bracing the solids and promoting digestion and the formation of good chyle. For this purpose, we must have recourse to such medicines as possess a tonic power, together with frequent immersion in cold water, the effects of which may be much increased by frictions with flannels, a free, open, and dry

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* See Mémoires de Physiologie et de Chirurgerie Pratique, par Scarpa et Leveille.
† See Medico-Chirurgical Transactions, vol. vii. part ii. p. 407.

air, a generous nutritive diet with wine, and proper exercise by carrying the child in a horizontal posture. An erect one might be apt to increase the deformity.

As children cannot easily be prevailed upon to take the cinchona bark or any kind of bitters, for the purpose of invigorating the system, myrrh* and the metallic tonics must be employed. The most proper of these are the ferri subcarbonas, ferrum ammoniatum, and zinci oxydum, which may be given as advised below,† together with a few grains of rhubarb. The quantity of this is to be increased or diminished according to its effects; and the dose of the ferri subcarbonas, ferrum ammoniatum, or zinci oxydum, may be augmented gradually.

Where the child can be persuaded to take the cinchona, we may give it at the same time with the metallic tonics, either in substance, decoction, or infusion, or we may try the extract dissolved in a little Port wine.

To assist the effect of these remedies, a gentle emetic should be given occasionally, but more particularly in those cases where the appetite and digestion are considerably impaired. The moderate agitation of the abdominal viscera produced by this medicine will greatly tend to remove the obstructions in the mesenteric glands. The bowels are to be kept gently laxative with rhubarb, joined to a small quantity of any neutral salt.

When the rickets are accompanied with mesenteric obstructions, deobstruents, with small doses of rhubarb, and repeated frictions on the abdomen, will have a beneficial effect.—See Scrofula and Atrophia.

In cases of difficult dentition we should resort to the means advised under this head, and in those of worms to vermifuge medicines. In venereal taints we may prescribe tonics combined with mercurials.

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* 1. ℞ Myrrh. Optim.
Pulv. Calumb. āā gr. v.—x.
Ferri Sulphat. gr. iss. M.
ft. Pulvis, ex pauxillo syrupi bis quotidie capiendus.

† 2. ℞ Vin. Ferri, f. ʒi. –ʒiij. ex cochl. ij.
Decoct. Cort. Cinchon. bis in die.

Vel,

3. ℞ Ferri Subcarbonat. gr. vj.
Pulv. Rhei, gr. iv.
Sacch. Alb. Pulv. gr. viij. M.
ft. Pulv. mane et vespere sumendus.

Vel,

4. ℞ Tinct. Ferri Ammoniat. ♏ xx.—lx.
ex aquæ frigidæ cyatho bis in die.

* 1. Take Myrrh,
Powder of Calumba, of each from five to ten grains.
Sulphate of Iron, one grain and a half.
Mix them, and let this powder be taken twice daily, mixed in a little syrup.

† 2. Take Wine of Iron, from one drachm to three drachms twice a day, with two table-spoonsful of a Decoction of Peruvian Bark.

Or,

3. Take Subcarbonate of Iron, six grains.
Powdered Rhubarb, four grains.
White Sugar, powdered, eight grains.
Mix them. This powder may be taken morning and evening.

Or,

4. Take Ammoniated Tincture of Iron, from thirty drops to ninety, twice a day, in a glass of cold water.

Absorbents have been employed in rachitis by some practitioners, it is said with considerable success, and may therefore be combined with the tonics before recommended.

In rickets the principal advantage is to be derived however from general treatment: the patient, if a resident in a city, is to be removed to the country, where an elevated and dry situation should be chosen; he is to be supplied with nourishing diet, and a moderate quantity of wine. But as the poor, among whom the disease is most frequently observed, cannot change their residence, the diseased should be placed in the highest apartment of the house, which should be kept well ventilated.

The bed on which a rickety patient lies should consist of a hair mattress or oaten chaff, or it might be made of dried fern leaves, among which some aromatic herbs were mixed. Such beds are better than those made of feathers, for they do not yield to the weight of the body, and they are much drier. If the patient be very young he should be placed on his back, so that the weight of his body may have as little influence as possible on the bones; but as it is painful to remain constantly in this position, he may be allowed to sit up now and then, but not on a soft chair; he is to be placed on a seat capable of making a uniform resistance, with a high straight back, and without arms. He should not be allowed to walk for a considerable time; at first he will be incapable of doing so without assistance, and the strings and ribands necessary for supporting him contribute, by pressing on the parietes of the thorax, to deform that cavity.

Mechanical means have been proposed for obviating the effects of this disease, but it is nearly fruitless to attempt using any machines with very young children, and it is also impossible to confine them on their back in bed; besides, it would be extremely

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Vel,

5. ℞ Ferri Ammoniat. gr. iij.—xv.

Extract. Gentian. gr. vj.
Syrup. q. s. M.

ft. Bolus, aut pilul. bis terve in die capiendus.

Vel,

6. ℞ Tinct. Ferri Muriat. ℥ iii.—x.

Infus. Cort. Cascaril. f. ℥j. M.

ft. Haustus, ter in die adhibendus.

Vel,

7. ℞ Zinci Oxydi, gr. xij.—xxiv.

Pulv. Cinnam. ℈j.

Sacch. Alb. ℈ij. M.

ft. Pulv. in chartul. xij. dividend. quarum unam dosem capiat horâ decubitûs et mane quotidie.

Or,

5. Take Ammoniated Iron, from three grains to fifteen.
Extract of Gentian, six grains.
Syrup, a sufficiency to form them into a bolus or pills for a dose, to be taken twice or three times a day.

Or,

6. Take Muriated Tincture of Iron, from five to fifteen drops.
Infusion of Cascarilla Bark, one ounce.
Mix them, and give this draught thrice a day.

Or,

7. Take Oxyd of Zinc, from twelve grains to twenty-four.
Compound Powder of Cinnamon, one scruple.
White Sugar, two scruples.
Mix them, and divide the whole into twelve papers, of which let one dose be taken night and morning.

injurious to keep them constantly in this posture: the continued extension of the limbs, and the inactivity of the muscles, would add to the general debility, and consequently increase the disease. Splints applied to the limbs, strong leather boots, and the apparatus for the spine, are really useful only in those cases where the patient is of a certain age, and when the progress of the disease is gradual, and the strength not too much exhausted; and even in most of these cases the inactivity necessarily occasioned by these machines is productive of disadvantages which are not compensated by their good effects. Apparatuses of this kind may probably therefore be fitter for correcting vicious attitudes contracted by children of a weak frame, than deformity arising from rickets.

Mr. John Veirac, surgeon at Rotterdam, in his Treatise on the Rickets, which obtained a premium from the Society of Arts and Sciences at Utrecht, asserts, that the acidity of the milk in the stomachs of infants is incorporated with the mass of blood, and insinuates itself into the very substance of the bones. We are informed by him, that the blood in these cases after death effervesces with the liquor ammoniæ subcarb. The cure he recommends corresponds with this theory, and consists in the exhibition of alkaline medicines.

Mons. Bonhomme, of Paris, in his Memoir on the Nature and Cure of Rachitis,* advises a similar mode of treatment. According to this gentleman, the disorder arises on the one hand from the development of an acid, approaching in its properties to the vegetable acids, particularly the oxalic; and, on the other, from the defect of phosphoric acid, of which the combination with animal calcareous earth forms the natural basis of the bones, and gives them their solidity. From this opinion he infers, that the proper treatment of rachitis must turn on two principal points, viz. to prevent the development of the oxalic acid, and to re-establish the combination of the phosphoric with the basis of the bones.

These intentions, he thinks, may often be accomplished by the internal use of phosphate of lime and phosphate of soda, and by the external use of alkaline lotions. In this Memoir he relates several cases in which these practices were apparently attended with the best effects. A powder was formed of equal parts of phosphate of lime and phosphate of soda, and taken by infants twice a day to the extent of a scruple for a dose. The alkaline solution was made by dissolving half an ounce of common potass in a pound of very pure spring water. When this solution is to be used, the skin must first be rubbed with a dry cloth, or a piece of fine flannel. After this precaution, the diseased parts are to be washed carefully with the warm solution, and at length wiped so as to leave no trace of moisture. This wash must be repeated at least twice a day.

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* See Dr. Duncan's Annals of Medicine for 1797.

We are further informed by Monsieur Bonhomme, that he has seen various instances of children cured of their disposition to rachitis merely by washing with the alkaline liquid; but he considers the internal remedies as possessing superior efficacy.

He contends, that the calcareous phosphate taken internally is readily transmitted by the lymphatic passages, and contributes to ossification; and that the internal use of the calcareous phosphate, whether alone or combined with the phosphate of soda, powerfully contributes to restore the natural proportions in the substance of the bones, and thereby accelerates the cure of rachitis. In support of these opinions, he relates various experiments made on young fowls, some of which took a proportion of calcareous phosphate with their food. After an exact comparison, there could (he tells us) be no doubt of the efficacy of calcareous phosphate in favouring the progress of ossification.

ORDER III.

IMPETIGINES.

A DEPRAVED habit, producing preternatural affections of the skin, or external parts of the body, characterizes this Order.

SCROFULA.

SCROFULA consists in hard indolent tumours of the conglobate glands in various parts of the body; but particularly in the neck, behind the ears, and under the chin, which after a time suppurate and degenerate into ulcers, from which, instead of pus, a white curdled matter, somewhat resembling the coagulum of milk, is generally discharged.

The first appearance of the disease is most usually between the third and seventh year of the child's age, but it may arise at any period between these and the age of puberty; after which it seldom makes its first attack. It most commonly affects children of a lax habit, with a smooth, soft, and fine skin, fair hair, rosy cheeks, and a delicate complexion; but it is occasionally met with in those of a dark one. It likewise is apt to attack such children as show a disposition to rachitis, and marked by a protuberant forehead, enlarged joints, and a tumid abdomen.

Scrofulous persons are often comely and handsome, and rather distinguished for acuteness of understanding and precocity of genius. They are, however, seldom robust, or able to endure much fatigue without having their strength greatly exhausted, and

their flesh much wasted; but when they once begin to regain these, their convalescence is usually rapid.

Scrofula prevails most in those climates where the atmosphere is cold and humid, where the seasons are variable, and the weather unsteady. From latitude 45° to 60° is the principal climate of this disease. A long continuance of inclement weather may increase any predisposition to scrofula; and in persons already much predisposed to it, any uncommon, though temporary exposure to wet and cold, is sometimes an exciting cause of an immediate attack. Besides climate and exposure to moist air and atmospherical vicissitudes, every other circumstance which weakens the constitution and impairs the general strength of the system predisposes to scrofula; thus breathing impure tainted air unfit for respiration, and living upon food of an unwholesome and indigestible nature, which does not afford proper nourishment to the body, favours an attack of scrofula by reducing the strength of the system, and making the person weakly. The neglect of due personal cleanliness and of salutary exercise, indolence, inactivity, the want of warm clothing, confinement in cold damp habitations, &c., may all be regarded as so many exciting causes, and satisfactorily account for the prevalence of the disease among children employed in large manufactories, as at Manchester, &c.

Scrofula is by no means a contagious disease, but beyond all doubt is of an hereditary nature, and is often entailed by parents on their children. The patient, it is true, is not born with the disease, but only with a greater aptitude to revive certain morbid impressions which may bring the latent dispositio into action. There are indeed some practitioners who wholly deny that this* or any other disease can be acquired by an hereditary right; but that a peculiar temperament of body, bias, or predisposition in the constitution, to some diseases may extend from both father and mother to their offspring, is, I think, very clearly proved; for example, we very frequently meet with gout in young persons of both sexes who could never have brought it on by intemperance, sensuality, or improper diet, but must have acquired the predisposition to it in this way.

A predisposition to become affected by certain diseases on the application of exciting causes does certainly exist in the human race, and particularly so (there is every reason to presume) in scrofula, gout, and mania. In some instances it is more strongly marked than in others, but predisposition is inert, and of itself insufficient to produce disease. It requires for this purpose the application of an exciting cause. This is the proper light in which we should view what are termed hereditary predisposition and hereditary disease.

A remarkable circumstance attending the transmission of scrofula is, that although it is an hereditary disease, it does occasion-

* See Essay on the Diseases of the Absorbent System, by W. Goodlad.

ally pass over one generation and appear again in the next, so that the grandfather and grandson (the first and third generations) shall both be scrofulous, while the intermediate one, which holds the more intimate relation of father and son, and connects the two others together, shall be exempted from any attack of the disease.

The matter which scrofulous sores generate does not seem to possess much acrimony; for if the sore be of limited extent, the system does not suffer by its continuance; nor do the neighbouring parts seem to be much affected by its vicinity. Neither is it contaminating, as has been proved by Mr. Kortum,* who attempted to transfer scrofula from one person to another by inoculation: but although he took great pains to insert the matter completely, and although he repeated the experiment frequently, yet all his attempts failed of success; as no disease was communicated, nor even any evident irritation excited at the place where the matter was inserted. All apprehension of scrofula being propagated by contagion or contact, appears therefore to be a groundless prejudice.

The late Dr. Cullen supposed scrofula to depend upon a peculiar constitution of the lymphatic system. One of the most frequent symptoms of this disease is undoubtedly an enlargement of the lymphatic glands; and the frequency, and often universality of such swellings, have induced some physicians to look upon scrofula as depending upon a morbid affection of the lymphatic system; but many other parts of the body which show little of a glandular structure are very often the primitive seats of scrofula. A modern writer† considers scrofula as a disease arising from and generated by disorders of the digestive organs, but this opinion is ill founded. Some writers have attributed much influence in its production to the habitual use of impure water, among whom is the late Dr. Heberden. In my opinion, scrofula is a disorder closely connected with a delicate constitution, lax fibres, and debility.

It is a disease of very frequent occurrence in this country, particularly in large manufacturing towns, appearing under various forms, and in different degrees of severity, from a state of mildness, which hardly betrays any perceptible external symptoms, to a state of violence, which produces the most miserable objects of human wretchedness; and whenever it mingles with any accidental or local complaint, it makes all the symptoms worse and more difficult to cure: this happens particularly in syphilis.

The attacks of scrofula seem much affected or influenced by the periods of the seasons. They begin usually some time in the winter and spring, and often disappear, or are greatly amended, in summer and autumn. The first appearance of the disorder is com-

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* De Vitio Scrofuloso, p. 218.

† See Essay on Scrofula, by Mr. Richard Carmichael, p. 26.

monly in that of small oval or spherical tumours under the skin, unattended by any pain or discoloration. These appear in general upon the sides of the neck, below the ear, or under the chin; but in some cases the joints of the elbows or ankles, or those of the fingers and toes, are the parts first affected. In these instances we do not, however, find small moveable swellings, but, on the contrary, a tumour almost uniformly surrounding the joint, and interrupting its motion.

After some length of time, the tumours become larger and more fixed, the skin which covers them acquires a purple or livid colour, and being much inflamed, they at last suppurate and break into little holes, from which at first a matter somewhat puriform oozes out; but this changes by degrees into a kind of viscid serous discharge, much intermixed with small pieces of a white substance, resembling the curd of milk.

The tumours subside gradually, while the ulcers at the same time open more, and spread unequally in various directions; after a while some of the ulcers heal; but other tumours quickly form in different parts of the body, and proceed on in the same slow manner as the former ones to suppuration. In this way the disease goes on for some years, and appearing at last to have exhausted itself, all the ulcers heal up, without being succeeded by any fresh swellings; but leaving behind them ugly puckerings of the skin, and scars of considerable extent. This is the most mild form under which scrofula ever appears.

In more virulent cases the eyes are particularly the seat of the disease, and are affected with ophthalmia, giving rise to ulcerations in the tarsi, aud inflammation of the tunica adnata, terminating not unfrequently in an opacity of the lens.

In similar cases the joints become affected; they swell, and are incommoded by excruciating deep-seated pain, which is much increased upon the slightest motion. The swelling and pain continuing to increase, the muscles of the limb become at length much wasted. Matter is soon afterwards formed, and this is discharged at small openings made by the bursting of the skin. Being, however, somewhat of an acrimonious nature, it erodes the ligaments and cartilages, and produces a caries of the neighbouring bones. By an absorption of the matter into the system, hectic fever at last arises, and in the end proves fatal.

The bones also of scrofulous persons partake of the general disease in the constitution; they seem to contain a smaller proportion of animal earth, and a larger of gelatinous matter, than what accords with the composition of a healthy bone, on which account they are exceedingly susceptible of a morbid action. The diseases to which they are most liable, are general and partial enlargement, inflammation, suppuration, and exfoliation. They are also easily fractured, which facility is much increased, especially in the long bones, by the deficiency of solid substance; for the cylindrical

shell is preternaturally thin, and therefore mechanically weak, so that the bone breaks upon the application of an inconsiderable force.

A diseased state of the vertebræ, which in consequence of the softness of their bodies occasions a protrusion of their spinal processes, and a compression of the medulla, is generally allowed to be closely connected with scrofula.

The primary attacks of scrofula often admit of an apparent cure, while their sequelæ are secretly laying the foundation of diseases which undermine the patient's constitution, and unexpectedly manifest their insidious effects at a distant period of time, when no suspicion was entertained of their existence.

When scrofula is confined to the external surface, it is by no means attended with danger, although, on leaving one part, it is apt to be renewed in others; but when the ulcers are imbued with a sharp acrimony, spread, erode, and become deep, without showing any disposition to heal; when deep-seated collections of matter form among the small bones of the hands and feet, or in the joints; or tubercles in the lungs, with hectic fever, arise, the consequences in all probability will be fatal.

On opening the bodies of persons who have died of this disease, many of the viscera are usually found in a diseased state, but more particularly the glands of the mesentery, which are not only much tumefied, but often ulcerated. The lungs are frequently discovered beset with a number of tubercles or cysts, which contain matter of various kinds. Scrofulous glands, on being examined by dissection, feel somewhat softer to the touch than in their natural state; and when laid open, they are usually found to contain a soft curdy matter mixed with pus. Examinations after death of those who have laboured under a diseased state of the spinal column have shown that almost all the glands are found in an enlarged, diseased, and often suppurated condition, and that cysts are also discovered, connected with the diseased vertebræ, that contain curdy, purulent, and other matter of unequal consistence.

Scrofula is a disease the cure of which is of acknowledged difficulty. Its treatment naturally divides itself into two periods. The first is, that in which, without any local sore or other marked symptoms of disease, there is sufficient evidence of a scrofulous predisposition prevalent in the system. The other is, that in which some local sore, or other scrofulous symptom, which requires appropriate management, that may either concur with the general treatment of the constitution, or interfere with it, has actually taken place.

As scrofula is greatly promoted by the slow operation of a number of circumstances which produce a gradual change in the constitution, there is great reason to expect benefit from placing the patient in a different situation or circumstances. If, for instance, the continuance of improper diet has seemed to favour the appearance of the disease, an amelioration of it will naturally counteract

this tendency. A similar advantage will be derived from substituting the respiration of pure salubrious air, instead of what is tainted and unwholesome; and in like manner every management conducive to health, and that will invigorate the body, will contribute to correct the disposition to scrofula.

The languor and debility which prevail in scrofula, naturally indicate the necessity of employing a plentiful supply of wholesome nourishment, in such quantity as the stomach can bear without being overloaded, and of this light animal food ought to form a fair proportion. The quantity must be regulated by the appetite and powers of digestion. Milk, puddings, rice and other farinaceous substances, ought to constitute the remainder of the patient's diet. Where there is occasional atony in the stomach and languor, a moderate allowance of wine will be likely to prove salutary, but it will be best to give it between meals, with a bit of bread or cake.

To ward off an attack of the disease in those who show a predisposition to it, it will be advisable that they take every day regular and moderate exercise, continued sufficiently long to dispose them to rest, without inducing any degree of fatigue. When the patient is either too young or too weakly to take sufficient exercise by exertions of his own, external frictions assiduously applied, and persisted in for a length of time, are usually substituted, and, in young children in particular, have been practised in many cases with a very good effect.

Another highly important external application is bathing the body. The bath may be either warm or cold, simple, or impregnated with various medical substances. Cold bathing, especially in the sea, is a remedy universally employed in scrofula, and apparently with the greatest advantage in many cases; for it appears not only to improve the person's health and strength, but likewise to promote the dispersion of enlarged glands, and the re-solution of indolent swellings in the joints, even after they have attained a considerable size. But in order that cold bathing may be practised with safety and advantage, the constitution should have vigour to sustain the shock of immersion without inconvenience. If the immersion be succeeded by a general glow over the surface of the body, and the patient feels cheerful, and has a keen appetite, we may conclude that the bath agrees with him; but if he shivers on coming out of the water, continues chilled, and becomes drowsy, we may be assured that the cold bathing will not prove serviceable, and ought therefore to be discontinued. In all weakly patients the immersion should be momentary.

When any doubt is entertained with regard to the probable effects of cold bathing, it will be a prudent precaution to premise the use of a warm bath, which is often serviceable in those cases of scrofulous weakness which forbid the employment of a cold one. One great advantage of warm bathing is to relieve a certain dryness of the skin, which often accompanies scrofulous emacia-

tion and weakness, and occasions much oppression and distress. A small number of immersions is, in general, sufficient to accomplish the object, and to prepare the patient for the safe and beneficial use of the cold bath; though, when a great degree of scrofulous debility prevails, it may be necessary to continue the warm bathing, at the rate of two or three immersions a week, for some time.

At the commencement of a course of warm bathing, an immersion from twelve to twenty minutes, with a temperature of water varying from 90° to 100° of Fahrenheit's thermometer, may be recommended; but persons much accustomed to the practice of warm bathing in general remain longer at a time in the bath, and use a higher temperature of heat.

To promote the efficacy of the warm bath, frictions with some stimulant substance are often employed, and with advantage, particularly in certain cases of scaly scrofulous eruptions, and some of the more solid kinds.

The clothing of scrofulous patients ought to be of such a nature as completely to protect the wearers against any inclemency of the weather, and to keep them comfortable and warm; a flannel dress ought therefore to be worn next to the skin in cold weather. The reason why weakly people so sensibly feel the vicissitudes of weather in this country is, that in general they are too thinly clad, and this inconvenience has been much increased of late by the airy and light modern attire adopted by our fashionable females. In very bad cases, a change of climate may be advisable; but where circumstances will not admit of this, artificial warmth by fires or a stove ought to be substituted.

Every weakly scrofulous person who wishes to recruit his health and strength should retire to bed betimes each night, rise early in the morning, and if possible, select for his residence a situation where the air is pure and dry. It is indeed the unavoidable lot of the poor in large towns, and particularly in manufacturing ones, to inhabit cellars, or other cold, confined, damp, and ill-ventilated apartments.

It is generally recommended to scrofulous persons, who use sea-bathing, to drink a little of the water daily, that it may act as a gentle purgative, and empty the intestinal tube of all feculent matters. When not at the sea-side, a solution of any of the neutral salts, such as the potassæ tartras, potassæ sulphas, &c., may be substituted.

The submuriate of mercury is, however, by far the most celebrated of all the purgative medicines which have been employed in the treatment of scrofula, and it is undoubtedly a serviceable remedy in many stages of the disease. To enjoy its beneficial effects, however, with safety, we must be careful to avoid giving it in so large a quantity as to produce the specific effects of mercury to any extent; for it is well known that any deep mercurial impression on the system aggravates every symptom of scrofula. The hydrar-

gyri submurias, however, when given cautiously in moderate doses, so as to act merely as an alterative, or gentle purgative, agrees well with scrofulous complaints, and greatly contributes to discuss tumours and resolve indurations of such a nature. But to produce the desired effect, this alterative course must be continued for a sufficient length of time, carefully watching its effect, lest it should exceed the prescribed bounds, and produce any ptyalism or severe purging. The dose must be regulated by the age of the patient and other circumstances. A few weeks' trial will be sufficient to determine the probability of its removing or relieving the complaint.

In recent cases of obstruction, the submuriate of mercury joined with tartarized antimony,* has been used with benefit; and during the progress of the disease, where there is much irritation, or where there are deep-seated affections of the joints, opium has been added.

Other alteratives, such as the hydrargyrus cum sulphure,† Plummer's pill,‡ as likewise antimonials, with decoctions of guaiacum, sarsaparilla, sassafras, dulcamara, and mezereon, together with the Lisbon diet-drink (which is a combination of these,) have likewise been much employed, but usually without any seeming advantage.

Muriated barytes is said to have been given in some cases of scrofula with success. The proper dose is from three to ten or twelve drops twice a day, according to the age of the person. Beyond a certain dose it is apt to occasion sickness, tremors, and a loss of power.

The muriate of lime, we are given to understand by Dr. Wood,‖ has been much employed at the Newcastle Infirmary in lieu of the

‖ See the Edinburgh Medical Journal, vol. i. p. 147.

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* 1. ℞ Pulv. Cretæ Præparat. ʒj.
Hydrargyri Submuriat. gr. iij.—vj.
Antimon. Tartarizat. gr. ij. M.
ft. Pulvis in chartulas xij. dividend. quarum j. dosem sumat bis in die.

† 2. ℞ Hydrargyri Sulphuret. Nigr. gr. xv.
Pulv. Antimon. gr. j. M.
ft. Pulv. nocte et mane sumendus.

‡ 3. ℞ Hydrargyr. Submuriat.
Antimon. Sulphuret. Præcip. āā ʒss.
Gum. Guaiac. pulv. ʒj.
Syrup. q. s. M.
ft. Massa in pilulas xxx. distribuenda, quarum j. capiat omni nocte et mane.

* 1. Take Prepared Chalk, pulverized, one drachm.
Submuriate of Mercury, from three to six grains.
Tartarized Antimony, two grains.
Mix them, and divide the whole into twelve papers, of which let a dose be taken twice a day.

† 2. Take Black Sulphuret of Mercury, fifteen grains.
Antimonial Powder, one grain.
Mix them. Take this powder night and morning.

† 3. Take Submuriate of Mercury,
Precipitated Sulphur of Antimony, of each half a drachm.
Gum Guaiac, in powder, one drachm.
Syrup, a sufficiency to form the mass, which is to be divided into thirty pills, one of which is to be taken night and morning.

muriate of barytes, and with two great additional advantages; viz. its action was more immediate, and no bad consequences attended an over-dose, while at the same time its efficacy was decisive. He used it at first in the form of crystals, by dissolving three grains in an ounce of water; but he found the process of crystallizing the salt to be too tedious and difficult for general use, and that it did not possess any advantage over a fluid solution of the carbonate of lime in muriatic acid. Of the solution prepared agreeably to the Edinburgh Pharmacopœia, about a drachm for adults, and thirty drops for children, given in water twice or thrice a day, will be a sufficient dose.

A late writer on scrofula* tells us, however, that the muriate of lime had been employed by his colleague, Professor Thomson, of Edinburgh, in various cases of this disorder, without having derived benefit from it in a single instance. I can say little in its praise, as in the cases I have employed it no evident amendment or advantage was derived from it.

Medicines of the narcotic tribe, but more particularly hemlock, have also been used for the cure of scrofula, both in the stage of swelling and that of ulceration. From my own experience of hemlock, as well as the report made of it by others, it appears when administered internally,† to prove often serviceable in discussing swellings of this nature; and it likewise appears in some cases of ulceration, to have afforded relief by being employed externally, either in the form of poultice, or fomentation, or both. As an internal remedy in the ulcerated stage of scrofulous tumours, it seems to be inefficacious. It has, however, been considered by a modern writer‡ as a useful auxiliary in cases of great irritation, particularly if it be combined with calomel or preparations of iron, when either of these remedies is indicated.

To enjoy the full benefit of the curative powers of hemlock, it will be necessary to give it to the full extent that the constitution can bear with impunity. The limit of the dose, therefore, is to be measured by its effect in producing incipient symptoms of giddiness or nausea, which disturb the functions of the head and stomach. The course requires to be continued many weeks, before the good effects of its operation are perceptible.

The juice of the fresh leaves of the tussilago, or coltsfoot, is

* See Treatise on Scrofula, by Mr. J. Russel, p. 35.

‡ — Essay on the Diseases of the Vessels and Glands of the Absorbent System, by W.G oodlad.

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† 4. ℞ Extract. Cinchon. ℥ij.

—— Conii, ℥j. M.

Fiant pilul. xl. quarum ij.—iij. sumat bis vel ter de die.

† 4. Take Extract of Peruvian Bark, two drachms.

——Hemlock, one drachm.

Mix them, and make forty pills out of the mass, of which from two to three may be taken twice or thrice a day.

said to have been given with some advantage. When it cannot be procured in the fresh state, a strong decoction of the dried leaves may be substituted.

Lime-water and alkalies, as the sodæ carbonas, subcarbonate of ammonia, &c., are enumerated among the remedies often used in this disease, and administered, no doubt, under the supposition of an acid acrimony prevailing in the fluids. In some instances, a junction of soda with cinchona has been attended with a very good effect.

In a small work* lately published, the successful treatment of several severe cases of scrofula by means of the internal use of caustic alkali, in doses proportioned to the age of the patient, with the external application of small quantities of mercurial ointment at the same time, and which are mentioned to have resisted all other remedies, is laid before the public. The annexed formula† is what was employed. The water is directed to be boiled in a tin kettle, adding the lime by little at a time; the whole being properly slaked, the pearl ashes are to be put in, the mixture to be well stirred together, and then to be put into an earthen jar or pot well glazed on the inside, with a wooden spicket and faucet fixed in it to draw it off when wanted. The dose is a small tea-spoonful, or a drachm by measure, for children from four to six years old; one tea-spoonful and a half for those from six to eight; two tea-spoonsful and a half for those from eight to fifteen; and in the like proportion to those of more advanced age. The medicine is to be taken twice a day in a little malt-tea, barley-water, or thin gruel.

Burnt sponge is another remedy which has been much administered in scrofula, and frequently with advantage. It may be given either in the form of a bolus or draught.‡ A more active medicine, however, is the sodæ carbonas, which is now employed in lieu of the former, of which, indeed, it is the basis. The dose in these

* See Observations on Scrofula, by Mr. J. Brandish.

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† 5. ℞ Calc. Viv. Recent. ℔ij.
Cinet. Clavellat. American. ℔vj.
——— Ligni Combust. ℔ij.
Aquæ Bullient. cong. vj. M.

‡ 6. ℞ Spong. Ust. ℈j.—℥ss.
Pulv. Rhei, gr. iij.
Mel. Optim. q. s. M.
ft. Bolus, bis in die sumendus.
Vel,
7. ℞ Spong. Ust. ℈j.
Confect. Aromat. gr. x.
Aq. Menth. f. ℥j.—℥jss. M.
ft. Haustus. Capiat bis in die.

† 5. Take Quick Lime, two pounds.
American Potass, six pounds.
Wood-ash, two pounds.
Boiling Water, six gallons.
Mix them.

‡ 6. Take Burnt Sponge, from a scruple to half a drachm.
Powder of Rhubarb, three grains.
Honey, a sufficiency to form a bolus. Let this be taken twice a day.
Or,
7. Take Burnt Sponge, one scruple.
Aromatic Confection, ten grains.
Mint Water, from one ounce to one ounce and a half.
Mix them as a draught, and let this be taken twice a day.

cases is from ten to twenty grains, or a drachm, twice or thrice a day.*

To invigorate the constitution, it will be necessary in the cure of scrofula to employ such medicines as are supposed to impart strength to the body. Of the vegetable class the cinchona is the most esteemed; but previous to its use, and to ensure the full benefit from it, the bowels must be previously cleared of any morbid accumulation of fæces, either by the submuriate of mercury or neutral salts, in the manner before mentioned. The cinchona seems, however, best suited to those cases where there are extensive ulcers or large abscesses, with copious exhausting discharges of purulent matter; and in general to communicate that degree of energy to the actions of the system which tends to support and confirm the patient's strength. If the stomach will bear the powder, it will be the best mode of exhibiting it; but should it disagree, then either a decoction or infusion of it may be substituted, or we may try the extract properly dissolved.

If none of these preparations agree with the patient, or we wish after a time to change the medicine, some of the other vegetable tonics, such as calumba, cascarilla, gentian, myrrh, &c. (for various formulæ of these see Dyspepsia,), may be given; and to add to their efficacy, we may conjoin some agreeable aromatic, such as the tinctura cardamomi, or tinctura cinnamomi composita.

Of the mineral tonics, iron and the sulphuric and nitric acids are most valued for their virtues in the cure of scrofula. The latter are palatable, grateful to the stomach, and agree with all forms and stages of the disease, being peculiarly adapted to that state of fever which is connected with the putrid sloughs that are often formed

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* 8. ℞ Sodæ Carbonat. ℥iij.
Pulv. Cinchonæ, ℥jss.

Mucilag. Gum. Acaciæ, q. s. M.
ft. Electuarium, cujus sumat quantitatem nuc. moschatæ ter in die.

Vel,

9. ℞ Decoct. Cinchon. f. ℥x.

Tinct. Card. C. f. ℥iss.

Sodæ Carbon. gr. xv. M.
ft. Haustus, bis terve de die sumendus.

Vel,

10. ℞ Sodæ Carbonat. ℥ij.

Infus. Cinchon. f. ℥v.

Tinct. Cinnam. C. f. ℥ss.

Syrup. Cort. Aurant. f. ℥ij. M.

Capiat cochl. larg. ij. ter quaterve in die.

* 8. Take Carbonate of Soda, 3 drachms.
Powder of Peruvian Bark, one ounce and a half.
Mucilage of Gum Acacia, a sufficiency to form an electuary, of which let the bulk of a nutmeg be taken thrice a day.

Or,

9. Take Decoction of Peruvian Bark, ten drachms.
Compound Tincture of Cardamoms, one drachm and a half.
Carbonate of Soda, 15 grains.
Mix them, and let this draught be taken twice or thrice a day.

Or,

10. Take Carbonate of Soda, two drachms.
Infusion of Peruvian Bark, five ounces.
Compound Tincture of Cinnamon, half an ounce.
Syrup of Orange Peel, two drachms.
Of this mixture two large spoonsful are to be taken three or four times a day.

on the inside of large tumours when first exposed to the air, and to that state of weakness which disposes to copious perspiration upon any moderate degree of exercise. Dr. Mosman informs us,* that he found muriated barytes and the nitric acid to increase the appetite, and impart vigour to the system; but he never saw them exhibit any beneficial effect on the morbid glands. A few drops of either of the acids may be given with each dose of the cinchona, or other vegetable tonics. Of the preparations of iron, the subcarbonate, ferrum ammoniatum, and muriated solution, have been found most efficacious. We may give doses of these proportioned to the age of the patient, twice or thrice a day. To derive the full benefit from tonic medicines in scrofula, it will be advisable occasionally to administer the vegetable and mineral at the same time in combination.—(See formulæ thereof under the head of Dyspepsia). About ten grains of the ferrum ammoniatum, in the space of twenty-four hours, will be sufficient for an adult, and so in proportion for children.

Iron is less liable than cinchona to oppress the stomach with indigestion, or to produce accumulation in the bowels, and on these accounts is a more unexceptionable medicine in scrofula than the latter. During the use of tonics, a few grains of rhubarb, with one or two of the submuriate of mercury, may be given now and then.

Mineral waters of the sulphureous and chalybeate class may likewise prove serviceable in the treatment of the disease under investigation.

Arsenic is another mineral production which has been employed in scrofula with some advantage, and is said to contribute greatly to the cure of scrofulous ulcers. From one to five drops of a solution of this (see Intermittents) may be given to children twice or thrice a day, according to their age; and from five to ten, or more, to grown persons, diminishing the quantity if it affects the bowels.

Besides employing medicines internally to correct the cachectic state of the fluids and strengthen the system, we are often obliged likewise to make use of external applications.

Upon the first appearance of any tumour, or the enlargement of any joint by tumefaction of the parts surrounding it, it will always be advisable to disperse it, if possible, as we shall thereby relieve the patient from the risk of some very troublesome consequential symptoms. The discutients commonly employed are, different saturnine applications, the liquor ammoniæ acetatis, solutions of the muriate of ammonia, camphorated and ammoniated oils, a mixture of fresh bile with saponaceous liniment, plasters of soap, ammoniacum and mercury, sea-water poultices, hemlock, mercurial ointment, electricity, and likewise blisters. The *quercus*

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* See his Essay on the Nature, Origin, and Connexion of Scrofula and Glandular Consumption.

marinus or sea-tang, bruised, and made into a poultice, is an application much recommended. These may be tried in rotation, and where one fails, another may probably succeed. Where sea-bathing can be obtained, it will prove the most efficacious of all remedies.

It is only, however, in the incipient stages of the attack, and before effusion has attained a stationary state, that any benefit is to be expected from discutient applications; for after the parts have lost their activity, and have become indolent, these remedies will have little or no power over them.

The topical detraction of blood by means of leeches, will prove a powerful means in those cases of large glands which lie superficially, or adhere to the surface, and which are attacked with inflammation that threatens to terminate in suppuration, or where this occupies any joint or its immediate vicinity; but it is only under such circumstances that local detractions of blood are necessary and advisable.

During the incipient or inflammatory stage of scrofulous glandular swellings, an occasional gentle purgative to keep the bowels soluble, and consisting of a few grains of rhubarb joined with calomel, may prove serviceable.

In a case of some years standing, in which the glands of the neck had become enormously enlarged, and the tumour was attended with excruciating pains, much relief was obtained by anointing the parts morning and night with an ointment composed of one drachm of tartarized antimony rubbed with an ounce of lard, even after considerable doses of opium administered internally had failed to alleviate the pain. After using the ointment a few days, several postules of a considerable size appeared on the tumour, being the usual consequence of its application.

Galvanism and smart electrical shocks, passed through scrofulous tumours of an indolent nature, particularly when occupying glands in the neck, have in some instances had a good effect in dispersing them.

Repeated frictions simply with the hand without any substance interposed, except perhaps a little flour to prevent the abrasion of the skin, and continued for a considerable length of time each day, have been much recommended in indolently enlarged glands, and in some instances apparently with a very good effect.

A case of this nature in a young lady, whose knee became much enlarged after an attack of scarlatina,—and which had resisted the repeated applications of leeches, and tepid water poured over it, while the submuriate of mercury, hemlock, lime, &c., were given internally without the least advantage, and which was at last effectually cured under the care of Mr. Grovenor, of Oxford, by assiduous frictions with the bare hand, exercise on foot, and an occasional use of calomel,—is recorded in the 29th No. of the Edinburgh Medical and Surgical Journal.

The application of blisters to glandular swellings of this nature has sometimes proved effectual in occasioning them to suppurate quicker than they otherwise would have done. Where the activity of the inflammation is on the decline, and the swelling of a gland has become indolent and stationary, the stimulus of a blister imparts fresh vigour of action, which possibly may dispose the swelling to suppurate. In some instances both blistering and electricity have, however, been attended with a directly contrary effect, and have occasioned them to disperse.

When we fail in our attempts to disperse scrofulous swellings, and a suppuration has commenced, we are to promote and expedite this as much as we can. Poultices and other warm applications have little effect, however, in bringing forward these kinds of tumours, and when long used, they tend to weaken and relax the part so much, that the sores which ensue are rendered difficult of cure. Washing the parts with strong brine has sometimes been employed with success, and has expedited the formation of matter in scrofulous swellings. It is well known that scrofulous tumours suppurate very slowly, in spite of emollient poultices and other like applications, but it has been found* that by taking off the atmospherical pressure from the most depending part of the tumour by means of a cupping-glass applied over it, for about an hour twice or thrice a day for four or five days successively, applying immediately afterwards a warm poultice, so considerable an excitement is produced in the parts as to effect a speedy suppuration, and early discharge of the contents of the abscess.

Where the process of suppuration is sufficiently advanced, the contents of the abscess are to be evacuated by a lancet at once, if the collection be not large; if otherwise by repeated puncture at proper intervals, and the access of external air prevented by careful closure of the orifice, similar to what has been long practised by the most skilful surgeons in the treatment of lumbar abscess.

To correct the discharge, repress or destroy any luxuriant fungous growth, promote a proper suppuration, and dispose the ulcers to heal, it is usual to employ gentle escharotics, such as the hydrarg. nitrico-oxydum, verdigris, and burnt alum, which may either be sprinkled over them, or be applied mixed up with some mild ointment, as the unguentum ceræ. Where there is a languid action in any sore, which suspends its progress towards amendment, and renders it stationary, the use of gentle stimulants will be proper. A solution of the neutral or metallic salts, as the muriate of ammonia, oxymuriate of mercury, nitrate of silver, or the sulphate of zinc, will stimulate the ulcer to shoot forth granulations. A solution of the latter, in the proportion of from half a drachm to one drachm to about eight ounces of water, is consi-

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* See Medical and Physical Journal, No. 250, p. 454.

dered by Mr. Goodlad* to be the best application that can be made to scrofulous sores that have suppurated and opened.

Scrofulous abscesses have been punctured, and the cavity afterwards injected with a solution of the sulphate of zinc in the proportion of about eight grains of the latter to an ounce of the former, with the best effects,† as healthy inflammation has supervened, which terminated in adhesion, without any return of the complaint.

The application of linen cloths dipped in cold water, sea-water, or lime-water, and renewed as frequently as they become dry throughout the course of the day, with that of some mild plaster or ointment, such as the ceratum plumbi acetatis, spread upon fine lint by night, is a mode of treatment much recommended in scrofulous ulcers.

If these fail in healing the ulcers, the linen rags may be moistened with a solution of two drachms of the plumbi acetas in a pint of water, from which application I have seen very good effects derived. Dr. Darwin used powdered oak-bark mixed with white lead.

Scrofulous ulcers which had resisted many other remedies, have healed under a weak mixture of nitric acid with water.

In sores which are spreading and irritable, the application of an aqueous solution of opium or of hemlock, and afterwards of a solution of zinc, may be beneficial.

Where the granulations rise above the surface, and are broad and flabby, and where pressure cannot be applied, the sorrel poultice has proved useful. The topical employment of bruised sorrel leaves (*rumex acetosa*), has been strongly recommended as contributing very much to the cicatrization of indolent scrofulous ulcers.

In sores of an ugly, gleeting, and ill-conditioned appearance, much benefit has been obtained by the application of a poultice made with crumbs of bread, moistened with a solution of about an ounce of the crystals of soda in a quart of water.

The sub-borate of soda in the proportion of half a drachm, or one drachm mixed in an ounce of unguentum cetacei or ceratum calaminæ, has been found a useful and efficacious application to scrofulous ulcers; and by such dressings they have frequently been healed in a short space of time, after having resisted other modes of treatment.

Painful and deep-seated ulcerations, the consequence of a scrofulous habit, and which are attended with much local irritation, have been relieved by a use of the Malvern water. Applied to the sore, it moderates the profuseness of the discharge, corrects the fœtor which so peculiarly marks a caries of the bone, promotes the granulating process and a salutary exfoliation of the carious

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* See his tract on Scrofula.

† See Practical Observations in Surgery, &c., by Mr. J. Howship.

part, and by a long perseverance in this course, very dangerous and obstinate cases have at last been entirely cured. Inflammation of the eyes, especially the ophthalmia, which is so troublesome in scrofulous habits, often yields to this simple application.*

It has already been observed, that diseases of the vertebræ, which in consequence of the softness of their bodies occasion a protrusion of their spinal processes, and a compression of the medulla, are frequently connected with scrofula. In such cases Mr. Pott depended principally on a drain by issues applied on each side of the projecting spinal process, and in some of them successfully treated in this manner, confinement to a horizontal position was unavoidable. Sir James Earle, fully aware that issues were ineffectual unless the superincumbent weight was removed from the morbid part, and objecting to the horizontal position from its being irksome to the patient, "weakening and relaxing, and consequently retarding the cure," as he expresses it, endeavoured to substitute a mean betwixt the confinement on a couch and the pressure from an erect position. He therefore recommended and employed a form of machinery, which should take off the incumbent weight from the diseased vertebræ and transfer it to the pelvis. Mr. Baynton,† (who is also a writer on diseases of the spine,) having compared the opinions and practice of Mr. Pott and Sir James Earle, and from facts collected from the writings of other surgeons of eminence, has been induced to conclude, that a system of resting in a horizontal position, regulated by scientific principles, will accomplish the cure of diseases of the spine, after the failure of drains and machinery steadily continued a number of years under the direction of skilful surgeons; and to substantiate the efficacy of the mode of treatment which he advises, he has recited the history of some cases which fell under his care. He is induced to suppose that the success which attended the cases treated by Mr. Pott, by issues made with caustic, conjoined with a horizontal position during the greatest part of the cures, as the patients could not bear to remain upright, was more owing to the uninterrupted rest they enjoyed than to the effects of the drains from the neighbourhood of the diseased portion of the spine.

Great doubts have indeed been entertained by other practitioners respecting the efficacy of caustics in caries of the spine, and they have recommended in their stead occasional cupping, repeated blisters, aperients, the muriate of lime, a milk diet, and long-continued repose in a horizontal position, and particularly at the commencement of the disease.

Where an abscess has formed near the spine, an issue should, however, instantly be established on that side of the vertebræ which is opposite to where the matter issues from.

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* See Dr. Saunders's Treatise on Mineral Waters.

† See his Account of a successful Method of treating Diseases of the Spine.

An able work on the nature and treatment of the distortions to which the spine and bones of the chest are subject, has lately been submitted to the public by Mr. Shaw, in which he notices the various kinds of stays and collars that have been usually employed in such distortions, together with a use of the inclined plane; all of which he condemns, and trusts the cure principally to exercise, so contrived as to call into action those muscles which have a tendency to counteract the deformity: but for these I must refer to the work itself, as without the assistance of the diagrams and plates in illustration of Mr. Shaw's mode of treatment, it is nearly impossible to convey a correct idea of it to my readers.

DISEASED MESENTERIC GLANDS.

Children of a scrofulous habit are very often affected with a diseased state of the mesenteric glands: the little patient usually complaining of a deep-seated lancinating pain within the abdomen, which gradually enlarges, while the other parts of the body are emaciated. (See Atrophia).—The countenance becomes altered, the eyes seem glassy and sunk in their sockets, the nose is sharpened, the cheeks are of a marble whiteness, unless when they are flushed with hectic fever, and the whole body is indeed of the same hue. Sometimes the lips are swelled and of a deep red colour, and sometimes the angles of the mouth are beset with small ulcers. The state of the bowels is variable, though more commonly relaxed than otherwise. When they are relaxed, the stools consist chiefly of frothy mucus tinged with bile, by which discharge an excoriation of the verge of the anus is now and then produced.

Although the appetite is tolerably good, nay often voracious, in children whose mesenteric glands are thickened and diseased, neither health nor strength result from it; the more food that is taken the worse is the child generally, as it oppresses without nourishing the system. Until the obstructions are removed, no healthy action can therefore take place.

In the advanced stage of the disease the child is fretful, peevish, and inactive. There is usually an accession of fever towards the evening, the pulse being at that time generally about 120, while at other times of the day it is seldom less than 100 in a minute. There is but little thirst, and the tongue suffers no change, except perhaps being now and then streaked with white at the sides. The skin is dry to the touch and rough, and the cuticle is not unfrequently thrown off in scales.

It has been supposed that a connexion frequently exists between chronic peritonitis and a diseased state of the mesenteric glands.

This diseased state of the mesenteric glands is to be distinguished from enteritis by there being no vomiting or difficulty in procuring evacuations with the ordinary quantity of medicines,

and but little pain being perceived on pressure; and it may be known from the febris infantum remittens, by the accession of fever being attended with restlessness rather than an inclination to sleep; by the excretions not being particularly changed from their natural appearance; by the accession of fever occurring only in the evening; and by the duration of the complaint: whereas in the remitting fever the paroxysms are attended with drowsiness; the evacuations are unnatural both in smell and colour; the accessions of fever are very irregular, as well in their recurrence as in their duration; and the disease has more the character of an acute than of a chronic one.

The disorder attacks children from the age of a few months to ten or twelve years; and the earlier it appears the greater will be the danger. In all ages the prognostic should be guarded, and for the most part be unfavourable; for the disease is generally far advanced before it becomes an object of medical attention, owing to its gradual progress, and being attended with scarcely any pain at first. An improvement of the colour and look of the countenance, the evening accession of fever being less severe and its duration shortened, increase of the flesh and appetite, and a diminution of the size of the abdomen, are to be regarded as favourable signs. The most unfavourable symptoms are, a rapid increase of the emaciation, the evening accession of fever being severe and continuing through most of the night, the abdomen being much enlarged and tense, and the cuticle pealing off.

In the treatment of this diseased state of the mesenteric glands, gentle action upon the intestines by aperients will be highly proper; and therefore, it will be necessary to give one of the submuriate of mercury,* in a dose proportioned to the age of the child, twice every week. On the intermediate days, some slight tonic may be administered twice or thrice a day. (For these, see Atrophia.)—If the bowels are confined between the doses of aperients, they ought to be opened with a solution of some of the neutral salts; but we are at the same time to be cautious not to exhaust the strength of the patient by the exhibition of active purgatives. The less severe the evening accession of fever appears, the more free we may be in the exhibition of tonics, and the less necessity will there be for the use of purgatives: on the other hand, the more severe the evening paroxysm, the greater caution will be neces-

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* 1. ℞ Hydrargyr. Submuriat. gr. ij.—iv.
Pulv. Rhei, gr. iv.—x. M.
ft. Pulvis catharticus.
Vel,
2. ℞ Hydrargyri Submur. gr. ij.—iv.
Potassæ Tartrat. gr. viij.—ʒj. M.

* 1. Take Submuriate of Mercury, from two to four grains.
Powder of Rhubarb, four to ten grains.
Mix them as a cathartic.
Or,
2. Take Submuriate of Mercury, from two to four grains.
Tartrate of Potass, eight grains to one scruple.
Mix them.

sary in the exhibition of tonics, and the less restraint be required in the use of purgatives.

It is of the utmost importance in cases of diseased mesenteric glands to ensure the healthy state of the chylopoetic viscera, and the proper digestion of the food. By such treatment we remove a concurring cause to the prejudicial effects of this state of the glands upon the constitution of the patient. We thereby afford an opportunity for as much nutritious matter to be carried into the system as is compatible with the existing disease.

Exciting the surface of the body to healthy action by warm bathing every second or third night, and employing frictions of discutient liniment* night and morning over the whole of the abdomen, will greatly assist and expedite the cure.

The diet should be milk, gruel, sago, and other kinds of farinaceous food, with an admixture of dressed vegetables. Provided the patient exceed the age of two or three years, a small quantity of animal food may be allowed. Animal broths, jellies, &c., may be given to all that are weaned.

Exercise in the open air should be especially recommended, and as that of the sea usually proves beneficial to such patients, where a residence near the coast is practicable it should be adopted. When the disease gives way, and a decided diminution of the fever, pain, and enlargement of the abdomen, has taken place, we may recommend sea-bathing: at first with a bath heated to about 80 degrees, and so reduce the heat gradually, until at last the patient can safely bear the sea-water at its usual temperature. If it should be winter, the water may be heated to about 65 or 70 degrees.

SYPHILIS, OR THE VENEREAL DISEASE.

THE part of the world where this disease first originated has been much disputed, some looking upon it as of French extraction, and others supposing it to have been brought from America by the soldiers of Christopher Columbus. Be this as it may, it is certain that it was first observed at the siege of Naples in the year 1493, and that from thence it spread very rapidly throughout France, Spain, Germany, and other kingdoms.

The syphilitic poison is peculiar to the human species, and produces no effect whatever on any of the brute creation, as has incontestably been proved by repeated experiments: from whence we might infer that it was intended, not only as a check against any deviation from the rules of connubial chastity, but likewise as an incentive (if I may be allowed the expression) to the gay and

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* 3. ℞ Liniment. Saponis Comp. pro embrocatione.
Vel,
4. ℞ Liniment. Camphor. Comp.

* 3. Take Compound Soap Liniment, and use it for an embrocation.
Or,
4. Take Compound Camphor Liniment.

young, to form, at an early period of life, a satisfactory and honourable alliance, by which they may be enabled to gratify the passions implanted in them by nature, and propagate the species, without the risk of disease.

Some practitioners of the present day go so far as to doubt the existence of this virus, and even deny the specific power of mercury.

Syphilitic poison cannot, as happens in other eruptive complaints, such as the small-pox, measles, &c., be conveyed in the form of vapour, or, in other words, by breathing air which is contaminated by a person labouring under it. To give rise to syphilis, it is necessary that the matter or poison should be applied to some part which is soft or covered with a mucous membrane, or else to some place where there exists either an excoriation, ulcer, or wound.

It has been doubted whether it is possible for the disease to be communicated from the mother to the infant *in utero*. However rare such an occurrence may be, still it is very possible, and many well-authenticated cases are on record to substantiate the fact.

Venereal matter is always sure to occasion a conversion of the mucus of the part, or of the fluids of the wound or ulcer to which it has been applied, into matter similar to itself; and when a sufficient quantity has been produced, it excites an inflammation in the mucous membrane or glands, or in the wound or ulcer, and is then absorbed into the system, but very seldom before. Instances have indeed occurred in practice where absorption has taken place without any apparent effect of this kind being produced: they are, however, very rare.

The infection is almost always sure to show itself first in that part to which the matter is applied; and as syphilis most generally arises in consequence of an intercourse between the sexes, so the symptoms usually show themselves first in or about the organs of generation. Where a child at the breast communicates the contagion to its nurse, her nipples and breasts will be the parts first affected; and on the contrary, where it is the nurse that infects the infant, then its lips and other parts of its mouth will show the first symptoms of the disease. In like manner, if the infection is conveyed to an accoucheur, in consequence of having a slight scratch on any of the fingers of the hand with which he officiates, the wounded part will show the first appearances of the disease by becoming inflamed; soon after which the glands in the axilla of the same side will swell, be painful, and indurated.

Syphilitic matter, by being applied to the body, produces in the course of time either a local or a constitutional disease. By the former is meant an affection confined solely to those parts to which the poison was first applied; and by the latter is to be understood a general taint of the whole system and mass of fluids. Syphilis is therefore generally sure to show itself in both sexes,

either as a local affection under the form of a gonorrhœa or chancre, or else as a constitutional one, under that of confirmed lues venerea.

Between a local and a constitutional affection there are, however, certain appearances which are apt to take place in the absorbent vessels and glands nearest in situation to the parts affected with ulceration, and produced, no doubt, by the passage of the venereal matter through them. When the former becomes affected, a hard, red, inflamed line, somewhat similar to a cord, may be felt running all along the back of the penis; and when the latter are affected, which more usually happens, an induration, swelling, and inflammation of the glands themselves will take place, and a bubo will be the consequence. As in most instances the matter is applied first to the parts of generation, in consequence of an intercourse between the sexes; so, of course, the glands of the groins are most usually the seat of this symptom.

By a gonorrhœa virulenta, or clap, is to be understood a secretion and discharge of matter from the mucous membrane and glands of the urethra, in consequence of the application of syphilitic matter to them. By a chancre is meant a venereal ulcer, the nature of which is, to be much inflamed, to be very sore and painful, to be unequal at the bottom, to have prominent edges of an ash colour, and to show no kind of disposition whatever to heal when left to itself, but, on the contrary, to spread very much; and by a lues venerea is implied an affection of the whole habit and mass of fluids, in consequence of an absorption of the poison into the constitution, which produces certain effects on various parts of the body while diffused in the circulation.

Although a gonorrhœa and a chancre are both of them local affections on their first appearance, still there is this material difference between them, that, as in the first there is a formation of matter without any breach in the solids, and in the latter there is always a breach, so the first may go on for some time without degenerating into an affection of the whole system, and may at last effect its own cure; whereas the latter is never attended with this happy effect; but, on the contrary, affords great reason to fear, that in those cases where the virus is not corrected by a timely use of proper antidotes, an absorption of the matter will take place, and in due time give rise to a confirmed lues.

In mentioning this distinction between a clap and a chancre, I wish not, however, to be understood to mean, that the former never terminates in, or occasions, a taint of the whole system. In some cases, where a gonorrhœa has been of long standing, it has been attended with this effect, owing most probably to the formation of some little ulcer in the urethra; not but that I conceive it possible for absorption to take place without ulceration. The application of venereal matter for any considerable length of time to a part that is of a soft and spongy nature like the glans penis, may in

some instances, I apprehend, be productive of a constitutional taint without the existence of any previous ulceration.

It has been disputed whether or not the matter secreted in a clap is of a similar nature with that secreted from a chancre, and whether or not it is possible for a person labouring under the one or the other to communicate to a healthy subject a different species of the disorder from that with which he is infected. That a gonorrhœa, chancre, and confirmed lues, all arose from the same original infection, may, I think, readily be admitted; and that the matter produced both in gonorrhœa and chancre is of the same nature, ought not to be doubted, as daily observation must convince those who are frequently consulted in venereal cases, and who have given themselves the trouble to investigate the nature of the complaint which the person laboured under who propagated the infection, that the matter from a gonorrhœa may and often does give rise either to a clap, chancre, or confirmed lues, and that the matter secreted from a chancre will do the same. The event depends, most assuredly, on the state of the parts and the constitution of the patient, together with other accidental circumstances at the time the poison is applied, and not on any difference in the nature of the matter secreted in the one or the other affection.

I am aware that the doctrine I have here supported by no means accords with that which has been advanced by Mr. Benjamin Bell, and a few other modern practitioners of eminence; for these gentlemen consider gonorrhœa and lues as arising from different specific contagions. By the greater number of the profession, however, they are still considered as the same; and it appears by Mr. Cross's Report,* that the French Surgeons are still of opinion that lues may arise from gonorrhœa, and therefore that the poisons of both are identically the same. When facts, supported by accurate experiments and obvervation, are brought forward to convince me that they are separate poisons, I shall be ready to adopt the new opiniou, but not until then.

When a person labouring under the venereal disease forms a connexion with another who is free from it, and who happens to have any little excoriation, ulcer, or wound, about the parts of generation, it is probable, that if the poison is conveyed to the healthy subject, it will be most likely to show itself under the form of a constitutional affection; as in this case the matter is applied so as readily to be absorbed into the system, in a manner similar to what happens in the small-pox; whereas if it is applied to a part that is spongy, or to a surface covered with a mucous membrane, and where neither excoriation, ulcer, nor any wound exists, then the most probable consequences will be, either a gonorrhœa or a chancre.

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* See his Sketches of the Medical Schools of Paris.

In offering this as my opinion, I wish not to be understood as meaning to assert that this will invariably be the case. Much (as has already been observed) will depend on the state and irritability of the parts at the time the poison is applied ; as also on the habit of the person, and other accidental circumstances.

Another remark which may be added on the nature of the venereal poison is, that there seems to prevail in some constitutions a greater liability to be infected by it than in others; as two men having been connected with a diseased woman within a very short space of time, one of them shall contract infection from her, and the other shall escape with impunity.

GONORRHŒA VIRULENTA.*

No certain rule can be laid down with regard to the time that a clap will take before it makes its appearance after infection has been conveyed. With some persons it will show itself in the course of three or four days ; while with others there will not be the least appearance of it before the expiration of a week or two. It most usually is perceptible, however, in the space of from six to twelve days, and in a male begins with an uneasiness about the parts of generation, such as an itching in the glans penis, and a soreness and tingling sensation along the whole course of the urethra ; soon after which, the person perceives an appearance of whitish matter at its orifice, and also some degree of pungency on making water.

Here it may be proper to mention, that it is necessary to distinguish accurately true gonorrhœa from that discharge that sometimes takes place from the internal surface of the prepuce, and produced by any thing causing irritation there, or behind the corona glandis, as a want of due cleanliness, warts, &c.

In the course of a few days the discharge of matter in gonorrhœa will increase, considerably, will assume most probably a greenish or yellowish hue, and will become thinner, and lose its adhesiveness ; the parts will also be occupied with some degree of redness and inflammation ; in consequence of which, the glans penis will put on the appearance of a ripe cherry, the stream of urine will be smaller than usual, owing to the canal being made narrower by the inflamed state of its internal membrane, and a considerable degree of pain and scalding heat will be experienced on every attempt to make water.

Where the inflammation prevails in a very high degree, it prevents the extension of the urethra on the taking place of any erection, so that the penis is at that time curved downwards with great pain, which is much increased if attempted to be raised towards the belly, and the stimulus occasions it often to be

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* This disease belongs to Class IV. Locales, Order IV. Apocenoses, in the systematic arrangement of Dr. Cullen ; but I have judged it preferable not to separate the varieties of the venereal disease from each other.

erected, particularly when the patient is warm in bed; and so deprives him of sleep; producing in some cases an involuntary emission of semen. The above symptoms denote the presence of a chordee.

In consequence of the inflammation it sometimes happens, that at the time of making water, owing to the rupture of some small blood-vessel, a slight hæmorrhage ensues, and a small quantity of blood is voided. In consequence of inflammation, the prepuce likewise becomes often so swelled at the end that it cannot be drawn back; which symptom is called a phymosis: or that, being drawn behind the glans, it cannot be returned; which is known by the name of paraphymosis. Now and then, from the same cause, little hard swellings arise on the lower surface of the penis, along the course of the urethra; and these perhaps suppurate, and form into fistulous sores.

The adjacent parts sympathizing with those already affected, the bladder becomes irritable, and incapable of retaining the urine for any length of time; which gives the patient a frequent inclination to make water, and he feels an uneasiness about the scrotum, perinæum, and fundament. Moreover, the glands of the groin grow indurated and enlarged, or perhaps one of the testicles becomes swelled and inflamed; in consequence of which he experiences excruciating pains, extending from the seat of the complaint up into the small of the back, he gets hot and restless, and a small symptomatic fever arises.

Where the parts are not occupied by much inflammation, few or none of the last-mentioned symptoms will appear, and only a discharge, with a slight heat or scalding in making water, will prevail.

In consequence of the inflammation of gonorrhœa extending along the urethra, it sometimes happens that the mucus membrane of the bladder becomes thickened, indurated, and ulcerated, and pours out a considerable quantity of muco-purulent matter, which added to the urine, gives to it the appearance of whey.

If a gonorrhœa is neither irritated by an irregularity of the patient, nor prolonged by the want of timely and proper assistance, then in the course of about a fortnight or three weeks the discharge, from having been thin and discoloured at first, will become thick, white, and of a ropy consistence; and from having gradually begun to diminish in quantity, will at last cease entirely, together with every inflammatory symptom whatever: whereas, on the contrary, if the patient has led a life of intemperance and sensuality, has partaken freely of the bottle and high-seasoned meats, and has at the same time neglected to pursue the necessary means, it may then continue for many weeks and months, and on going off may leave a weakness or gleet behind it, besides being accompanied with the risk of giving rise, at some distant period,

to a constitutional affection, especially if there has been a neglect of proper cleanliness; for where venereal matter has been suffered to lodge between the prepuce and glans penis for any time, so as to have occasioned either excoriation or ulceration, there will always be danger of its having been absorbed.

Another risk arising from the long continuance of a gonorrhœa, especially if it has been attended with inflammatory symptoms, or has been of frequent recurrence, is the taking place of one or more strictures in the urethra. These are sure to occasion a considerable degree of difficulty as well as pain in making water, and, instead of its being discharged in a free and uninterrupted stream, it splits into two, or perhaps is voided drop by drop. Such affections become, from neglect, of a most serious and dangerous nature, as they not unfrequently block up the urethra, so as to induce a total suppression of the urine.

We may rest assured that inflammation in the urethra is the usual source of all strictures, and for most part this is excited by gonorrhœa; occasionally it has, however, arisen from some other cause producing continued irritation in the parts, as for instance, from some previous disease in the bladder or prostate gland. Most commonly the course of the complaint is this. The gonorrhœa has arisen and gone on unchecked, until, the inflammation being at its height, there is a purulent secretion and probably chordee; the disease, which was at first seated near the orifice of the canal, has spread backwards; but by the use of appropriate remedies, the pain and other inconvenient symptoms which the patient had experienced are ameliorated: still, however, the irritation does not entirely subside. Some pain and heat in voiding urine are still perceived, and from time to time there flows a gleety discharge; but this gleet is not the effect of mere relaxation of the vessels allowing a profuse discharge, as is too often supposed—it is the vestige of inflammation, in a milder and more chronic form. When this state of the parts is allowed to continue, a pretty firm stricture will at length be formed. The degree and firmness of the contraction will hold a strict relation to the length of time, and the frequency of the occasional increase of the irritation, pain, and discharge.

Where a gonorrhœa has been of long standing, warty excrescences are likewise apt to arise about the parts of generation, owing to the matter falling and lodging thereon; and they not unfrequently prove both numerous and troublesome.

Having noticed every symptom which usually attends on gonorrhœa in the male sex, it will only be necessary to observe, that the same heat and soreness in making water, and the same discharge of discoloured mucous matter, together with a slight pain in walking, and uneasiness in sitting, take place in females as in the former; but as the parts in women which are most apt to be affected by the venereal poison are less complex in their nature,

and fewer in number, than in men, so of course the former are not liable to many of the symptoms which the latter are; and from the urinary canal being much shorter and of a more simple form in them than in men, they are seldom, if ever, incommoded by strictures.

With women it indeed often happens, that all the symptoms of a gonorrhœa are so very slight, that they experience no other inconvenience than the discharge: except perhaps immediately after menstruation, at which period it is no uncommon occurrence for them to perceive some degree of aggravation in the symptoms.

Women of a relaxed habit, and such as have had frequent miscarriages, are apt to be afflicted with a disease known by the name of fluor albus, which it is often difficult to distinguish from gonorrhœa virulenta, as the matter discharged in both is, in many cases, of the same colour and consistence. The surest way of forming a just conclusion in instances of this nature will be, to draw it from an accurate investigation both of the symptoms which are present, and those which have preceded the discharge; as likewise from the concurring circumstances, such as the character and mode of life of the person, and the probability there may be of her having had venereal infection conveyed to her by any connexion in which she may be engaged.

Not long ago it was generally supposed, that gonorrhœa depended always upon ulcers in the urethra producing a discharge of purulent matter—and such ulcers do indeed occur in consequence of a high degree of inflammation and suppuration; but many dissections of persons who have died while labouring under a gonorrhœa, have clearly shown that the disease may and often does exist, without any ulceration in the urethra: so that the discharge which appears is usually that of vitiated mucus thrown out from the mucous follicles of the urethra. On opening this canal in recent cases, it usually appears red and inflamed, its mucous glands are somewhat enlarged, and its cavity is filled with matter to within a small distance from its extremity. Where the disease has been of long continuance, its surface all along, even to the bladder, is generally found pale and relaxed, without any erosion.

In the cure of a gonorrhœa we are to be directed by the symptoms which are present, and by the state of the disease at the time that advice is applied for. If at the commencement of the complaint the patient should experience much pain, heat, and difficulty in making water, together with other inflammatory symptoms, and he is at the same time of a full plethoric habit, it may be advisable to have recourse to antiphlogistic means, as bleeding, keeping the body open with gentle purgatives, allaying irritation by means of sedative in-

jections,* drinking copiously of mucilaginous diluting liquors, such as barley-water, linseed-tea, or solutions of gum. acaciæ in milk; making use of a very spare regimen; abstaining from all kinds of fermented and spirituous liquors, and avoiding exercise: but if an inflammatory diathesis does not exist, nor any great degree of ardor urinæ prevail, it then will be unnecessary to have recourse, either to general bleeding from the system, or purging.

In avoiding purging, when not necessary, we are however to take care not to run into the opposite extreme by suffering costiveness to prevail, as the lodgment of indurated fæces, as well as the voiding of them, might prove a stimulus to the urethra. In every stage of gonorrhœa it therefore will be advisable to keep the body perfectly open, by a regular use of some mild laxative† that is not of an irritating or drastic nature.

Nitre is a medicine which is often employed where there is any

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* 1. ℞ Ol. Amygdal. f. ℥iv.
Liquor. Plumbi Subacet. ♏ xiii. M.
ft. Injectio.

Vel,

2. ℞ Aq. Fontan. f. ℥iv.
Tinct. Opii Vinos. ♏ xxv. M.

Vel,

3. ℞ Liquor. Plumbi Subacet. ♏ xiii.
Aquæ Rosæ, f. ℥viij. M.

Vel,

4. ℞ Infus. Theæ Virid. Herb. f. ℥vj.
Liquor. Plumb. Subacet. ♏ xiii. M.

Vel,

5. ℞ Mucilag. Gum. Acaciæ, f. ℥iij.
Ol. Olivæ, f. ℥j. M. et adde
Tinct. Opii Vinos ♏ xxx. M.

Vel,

6. ℞ Liquor. Ammon. Acetat. f. ℥j.
Aquæ Fontan. f. ℥iv. M.

† 7. ℞ Confect. Sennæ, ℥jss.
Potassæ Supertart. ℥ij.
Pulv. Jalapæ, ℥ss.
Syrup. Simpl. q. s. M.
ft. Electuarium, cujus sumat cochl. minim. j. mane et vespere pro re nata.

* 1. Take Oil of Almonds, four ounces.
Solution of Subacetate of Lead, twenty drops.
Mix them.

Or,

2. Take Pure Water, four ounces.
Vinous Solution of Opium, forty drops.
Mix them.

Or,

3. Take Solution of the Subacetate of Lead, twenty drops.
Rose Water, eight ounces.
Mix them.

Or,

4. Take Infusion of Green Tea, six ounces.
Solution of Subacetate of Lead, twenty drops.
Mix them.

Or,

5. Take Mucilage of Gum Acacia, three ounces.
Olive Oil, one ounce.
Mix them.
And add
Vinous Solution of Opium, forty-five drops.

Or,

6. Take Solution of Acetate of Ammonia, one ounce.
Pure Water, four ounces.
Mix them.

† 7. Take Confection of Senna, one ounce and a half.
Supertartrate of Potass, two drachms.
Powdered Jalap, half a drachm.
Common Syrup, a sufficiency to form an electuary, of which let a teaspoonful be taken morning and evening as the occasion may require.

heat of urine; but this is very erroneous, for it cannot fail to increase the pain in making water, by its stimulus on the excoriated or inflamed urethra.

In the active or inflammatory stage of gonorrhœa, cubebs have of late been greatly lauded as a valuable remedy.

Among the symptoms attendant on gonorrhœa, it has been mentioned that phymosis and paraphymosis are sometimes present. In such cases it will be necessary either to immerse the penis frequently in warm water, or to have recourse to emollient fomentations, with the after-application of poultices, composed of linseed-meal, or crumb of bread, mixed up with a solution of the plumbi acetas, or a sufficient quantity of the liquor plumbi subacetatis diluted with common water, which are to be laid on cold; and the patient is at the same time to keep as much as possible in a recumbent position; or, if obliged to walk about, he should support the penis up to the belly by means of a proper bandage.

In those cases, both of phymosis and paraphymosis, accompanied by considerable inflammation, it will be advisable, previous to adopting the foregoing steps, to draw blood freely from the arm, to administer cooling purgatives every other day, and to observe a strict antiphlogistic regimen, with rest. Local blood-letting, so useful in other inflammations, would not be advisable here; for if the matter which flows from beneath the prepuce should happen to come in contact with the wounds inflicted by the leeches, troublesome sores might ensue.

In phymosis, besides pursuing the plan just recommended, it will be advisable every now and then to inject a little warm milk and water between the prepuce and glans penis, for the purpose of washing off any matter that may have lodged there, and which, if suffered to remain for any length of time, might produce ulceration. Where phymosis is accompanied with chancres, it will be proper to inject mercurials (such as the oxymuriate, in the proportion of one grain to an ounce of water) inside of the prepuce.

Indeed in most cases of confirmed phymosis, whether congenital or the result of inflammation, the division of the prepuce with a

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Vel,

8. ℞ Mannæ Optim. ℥ss.
Potassæ Tartrat. ʒiij.
Aq. Fervent. f. ℥iss.

Tinct. Jalapæ, f. ʒi. M.
ft. Haustus, pro re nata capiendus.

Vel,

9. ℞ Magnes. Sulphat. ℥ij.

Aq. Fervent. ℥vij.
Tinct. Sennæ C. f. ℥j. M.

Capiat cochl. magna iv. pro dos.

Or,

8. Take Manna, half an ounce.
Tartrate of Potass, 3 drachms.
Warm Water, one ounce and a half.
Tincture of Jalap, one drachm.
Mix them for a cathartic draught, to be taken occasionally.

Or,

9. Take Sulphate of Magnesia, two ounces.
Warm Water, seven ounces.
Compound Tincture of Senna, one ounce.
Of this mixture let four table-spoonsful be taken for a dose.

knife appears to be expedient. The surgeon's attention should be directed to the early stage of the complaint, and it should be a general rule to examine the naked glans before entering on a constitutional use of mercury, as not only warts and chancres are apt to be formed, but now and then extensive inflammation, terminating in ulceration and sloughing, takes place. Where ulceration is threatened, to prevent extravasation and preserve the urethra during healing, great advantage may be derived from the introduction of a small elastic gum catheter.

Where erysipelatous inflammation of the penis supervenes either on phymosis, paraphymosis, or chancre, no preparation of mercury should be employed either internally or externally until this subsides.

If a chordee attend on gonorrhœa, rubbing the parts with a strong solution of opium, or the tinctura opii, and keeping linen pledgets, dipped in the same, constantly applied (taking care to renew them however as often as they become warm), will greatly tend to remove both the pain and the spasmodic contraction. The most certain method of preventing this unpleasant symptom is to give the patient an opiate draught at bed-time, consisting of at least fifty or sixty drops of the tincture of opium in one ounce of camphor mixture.

In consequence of the inflammation running high, and extending a considerable way up the urethra, a tumour sometimes forms in the perinæum. In this case we should endeavour to disperse it by means both of general and topical bleedings, but more particularly the latter; by the application of saturnine poultices, such as before mentioned; by frequently administering laxative medicines, and by making use of a very spare regimen. Rubbing mercurial ointment on the part has been advised in cases of this nature; but it is seldom attended with a good effect.

Where the inflammation shows no disposition to remit from adopting these means, but on the contrary seems to proceed with haste to a suppuration, the evacuation of the matter externally should be promoted, to prevent its making sinuous openings into the urethra, and thereby terminating in fistula in perineo, which can only be removed by the proper surgical operation.

Sometimes the bladder becomes affected, in consequence of the inflammation extending to it; in which case the patient is troubled with a frequent inclination to make water without the ability of voiding it, together with pain in the organ itself, and a considerable degree of tension over the os pubis. To remove this affection it will be necessary to have recourse to general bleedings, copious dilution, emollient fomentations and clysters, &c., as advised under the head of Ischuria. In some cases of an obstinate suppression of urine, and where the endeavour to draw it off has failed, by placing the patient in a warm bath, and bleeding him ad deliquium animi, the surgeon has been enabled to pass the catheter with great ease. If these means prove unsuccessful, throwing up

an enema of an infusion of tobacco (see Ischuria) will sometimes be attended with a decisive effect.

The tinctura tabaci administered in a little linseed-tea, in doses of thirty drops, repeated twice or thrice a day, has proved an excellent remedy in dysuria arising in gonorrhœa, either from too early a use of astringent injections, or any other cause.

It has already been mentioned, that in consequence of the inflammation of gonorrhœa extending along the urethra, the mucous membrane of the bladder sometimes becomes thickened, indurated, and ulcerated, so as to occasion it to pour out a considerable quantity of muco-purulent matter, which, added to the urine, gives it the appearance of whey ; and moreover, that there is often a discharge of blood also. An obstinate case of this nature came lately under my care, and arose from an imprudent use of strong astringent injections, and an internal one of the tinctura cantharidis.

The cure of the chronic species of inflammation is to be effected by injecting the bladder with tepid and emollient decoctions ;* by the use of uva ursi, taken in the dose of a drachm three times a day ; by balsamics ;† and by a regular course of soda water.—See Cystitis.

The prostate gland as well as the bladder is sometimes affected also in consequence of gonorrhœa, and an inflammation arises in it, which is known by a pain and heat in the perinæum extending into the rectum, and a frequent desire to make water, without the ability of voiding more than a few drops at a time. To obviate this we should make use of topical bleedings, by the application of several leeches to the perinæum, together with a warm hip-bath and emollient fomentations and poultices, and we should keep the patient's body open with laxative medicines and clysters. Where there is great pain and irritation we may employ anodynes,

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* 10. ℞ Infus. Lin. Compos. f. ℥v.
Tinct. Opii Vinos. f. ℥ss. M.
ft. Injectio.

Vel.

11. ℞ Liquor. Calcis, f. ℥iv.
Ol. Olivæ, f. ℥ij.
Liquor. Plumbi Subacetat. ♏ xij. M.

† 12. ℞ Terebinth. Canadensis,
Bals. Copaib. āā f. ℥j.
Sacchar. Alb. ℥ss. Misceantur in mortario.
Dein adde paulatim
Aq. Distillat. f. ℥viij.
Tinct. Opii, ♏ xx. M.
ft. Emulsio, de quo sumat æger cochlearia magna iij. ter in die.

* 10. Take Compound Infusion of Linseed, five ounces.
Vinous Solution of Opium, half a drachm.
Mix them for an injection.

Or,

11. Take Lime Water, four ounces.
Olive Oil, two drachms.
Solution of Subacetate of Lead, eighteen drops.
Mix them.

† 12. Take Canada Turpentine,
Balsam of Copaiba, of each one drachm.
White Sugar, half an ounce.
Let them be well mixed in a mortar, and then add by degrees
Distilled Water, eight ounces.
Tincture of Opium, thirty drops.
Of this emulsion let the patient take three large spoonsful thrice a day.

both by the mouth and by adding them to the clysters.—See Dysuria.

In most cases of urinary irritation, the best mode, however, of exhibiting opium is that of enema. Sixty or eighty drops of the tincture may be administered in thin gruel with a table-spoonful of olive-oil. Occasionally we may introduce opium into the rectum in substance, and formed into a pill containing two or three grains. The extract of hyoscyamus, as also of aconitum, are sometimes employed as substitutes for opium where its preparations confine the bowels; but if pain be the symptom to which our attention is directed, nothing but opium can be relied upon.

In those deplorable cases where a total suppression of urine arises, and we are unable to draw it off either by a catheter or hollow bougie of elastic gum, we should puncture the bladder. The most approved method of doing this appears now to be through the rectum.—See Ischuria.

It seldom happens that a hæmorrhage of any consequence takes place in gonorrhœa; but when there does, it is to be suppressed by injecting sedatives and astringents into the urethra, such as a solution of plumbi acetas, alum, or zinci sulphas, in rose-water; by the application of pledgets dipped in the same externally, and by keeping the body at rest. Where these means prove insufficient to stop the hæmorrhage, we must apply a sufficient pressure.

Practitioners who aim at popularity by endeavouring to make hasty cures of gonorrhœa, are much in the habit of employing astringent injections on its first appearance. A frequent consequence however of this mode of practice is, that although the discharge is, perhaps, speedily suppressed, the person is soon afterwards attacked with an inflammation and swelling in one or both of the testicles.

Such a consequence being observed too frequently to arise from this treatment, it seems proper to notice, that previous to a use of astringent injections, we should take care to remove every inflammatory symptom whatever by a strict pursuance of the antiphlogistic plan; and that in employing them after we have effected

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Vel,

13. ℞ Terebinth. Chiæ, gr. iij.
Saponis Hispanic. gr. v.
Pulv. Gentian. q. s. M.

Fiant pilulæ iij. ter in die sumendæ.

Vel,

14. ℞ Extract. Conii, gr. iij.
Resin. Flavæ, gr. vj.
Bals. Copaib. q. s. M.

Fiant pilulæ iij. omni mane, hora meridiana, et vespere capiendæ.

Or,

13. Take Cyprus Turpentine, 3 grains.
Hard Soap, five grains.
Powder of Gentian, a sufficiency to form the mass, out of which let three pills be made, to be taken three times a day.

Or,

14. Take Extract of Hemlock, three grains.
Yellow Resin, six grains.
Balsam of Copaiba, a sufficiency.

Divide the whole into three pills, which dose may be taken morning, noon, and evening.

this, we ought to make them only of a moderate degree of astringency at first.

During the inflammatory stage it will be most proper to employ those of a sedative nature, as before advised; but on its going off, any of the astringent ones* here recommended may be substituted.

An injection of the sulphate of zinc, in the proportion of about a grain or two to each ounce of water, though perhaps one of the most active and successful of any we usually recommend, is apt, in persons of an irritable habit, to produce occasionally great pain, an increase of the discharge, and a peculiar liability to swelling of the testicles. Under such circumstances we are informed by Mr. Henry,† that he was induced to make trial of an injection composed of eight or ten grains of the acetate of zinc, dissolved in four or six ounces of water, or of a thin mucilage of quince-seeds, or a decoction of linseed or of barley, the success of which exceeded his expectations, and far surpassed that of any, the use of which he had ever witnessed.

The following is one of the methods advised for preparing the acetate of zinc:—To a solution of zinci sulphas in six or eight times its weight in water, add a solution of the acetate of lead in twice its weight in water as long as any precipitation ensues, or a

† See Medical and Physical Journal, vol. ix. p. 53.

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* 15. ℞ Zinc. Sulphat. ℈j.—℈ij.
Aq. Rosæ, f. ℥viij.
ft. Injectio.

Vel,

16. ℞ Plumbi Acetat. gr. xv.
Zinc. Sulphat. gr. x.
Aq. Distillat. f. ℥viij. M.

Vel,

17. ℞ Aluminis, ℥j.
Aq. Rosæ, f. ℥vj. M.

Vel,

18. ℞ Cupri Sulphat. gr. viij.
Aq. Fontan. f. ℥viij. M.

Vel,

19. ℞ Calaminæ Præpar. ℈jss.
Bals. Copaib. f. ℈ij.
Mucilag. Gum. Acaciæ, f. ℥ij.
Aq. Distillat. f. ℥vj. M.

Vel,

20. ℞ Bals. Copaib. f. ℥ij.
Mucilag. Gum. Acaciæ. f. ℥ss.
Misceantur simul, et adde
Liquor. Calcis, f. ℥vj.

* 15. Take Sulphate of Zinc, from one to two scruples.
Rose Water, eight ounces.
Mix them for an injection.

Or,

16. Take Acetate of Lead, 15 grains.
Sulphate of Zinc, ten grains.
Distilled Water, eight ounces.
Mix them.

Or,

17. Take Alum, one drachm.
Rose Water, six ounces.
Mix them.

Or,

18. Take Sulphate of Copper, eight grains.
Pure Water, eight ounces.
Mix them.

Or,

19. Take Prepared Calamine, one scruple and a half.
Balsam of Copaiba, 2 scruples.
Mucilage of Gum Acacia, two ounces.
Distilled Water, six ounces.
Mix them.

Or,

20. Take Balsam of Copaiba, 2 drachms.
Mucilage of Gum Acacia, half an ounce.
Mix them well together, and add
Lime Water, six ounces.

little longer, in order to ensure the complete decomposition of the sulphate of zinc; throw the whole upon a linen strainer, and wash off the soluble part by repeated affusions of distilled water; then evaporate and crystalize.

Some surgeons are much in the habit of employing injections of a mercurial nature; but in recent cases, and during the inflammatory stage of gonorrhœa, they are equally as improper as those of the astringent kind. When the inflammation has somewhat abated, and the discharge still continues in a virulent form, as likewise in those cases where there is reason to suspect that there are ulcerations in the urethra, mercurial injections* will be likely to be attended with a very good effect by easing the ardor urinæ, lessening the discharge, and shortly removing the complaint altogether.

There are a few who totally deny that gonorrhœa has a venereal origin; and there are others again who contend that it is a peculiar species of the venereal disease,—but at the same time they look on it as a local complaint, in which there is no danger of the system becoming affected by an absorption of the matter. They moreover regard it as a disease which will be sure to wear itself out, and at last effect its own cure, and therefore they neglect giving any medicine with the view of counteracting or destroying the syphilitic virus. The impropriety of proceeding in this manner, and the many injurious consequences which frequently result from it, must be too apparent to require my dwelling on them. Experience must have convinced the prudent surgeon, that in order to guard against any disagreeable consequences, and ensure a perfect cure, it will be advisable, in most cases of gonorrhœa, to make use of a proper quantity of mercury, in some shape or other.

In making this observation, I by no means wish to infer, however, that a clap can in no instance be effectually removed without mercury. In those cases where the disease is recent, and perfectly mild, and where neither excoriation nor ulceration has taken place, it probably may continue a local affection, and at last effect its own cure; but as we cannot discriminate those cases in which the matter will not be absorbed into the system from those in which

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* 21. ℞ Hydrarg. Oxymuriat. gr. ij.

Solv. in Spirit. Rectif. f. ʒij. et adde
Aq. Distillat. f. ℥viij.
Ammon. Muriat. gr. vj. M.

Vel,

22. ℞ Mucilag. Gum. Acaciæ, f. ℥ij.

Hydrargyr. Submur. ʒj.

Terantur simul in mortario, et adde

Liquor. Calcis, f. ℥vj.

* 21. Take Oxymuriate of Mercury, two grains.
Dissolve it in
Rectified Spirit, two drachms.
And add
Distilled Water, eight ounces.
Muriate of Ammonia, 6 grains.
Mix them.

Or,

22. Take Mucilage of Gum Acacia, two ounces.
Submuriate of Mercury, one scruple.
Let them be rubbed together in a mortar, and add
Lime Water, six ounces.

it will, it appears to be the safest and most advisable plan to have recourse to mercury in all severe cases of gonorrhœa; as by so doing we shall guard against any unpleasant consequences, which, whenever they ensue from neglect, will be sure to hurt the practitioner in the esteem of his patient.

As soon, therefore, as we can procure an abatement of the inflammatory symptoms, we may begin with a use of mercury, as well as of astringent injections, regulating the dose according to the effect it produces. If we give the pilula hydrargyri in preference to any other preparation of this medicine, we may begin with one consisting of about five grains every night, which is to be continued until either a coppery taste is perceived in the mouth, or the gums become slightly affected. On the event of either of these, the pill is to be taken only every second or third night, which will be sufficient to saturate the system, and effectually destroy the syphilitic virus.

If the pilula hydrargyri occasions a purging, we may substitute one composed of a combination of the submuriate of mercury and opium,* or of the hydrargyri oxydum rubrum,† as advised here, or directed in the treatment of confirmed lues. If these likewise purge, we must then have recourse to mercurial ointment, half a drachm of the strongest kind of which should be rubbed into the hams and groins every night, till the mouth becomes affected in either of the ways before mentioned. Whatever preparation of mercury we may employ, it ought by all means to be continued for some short time after the disappearance of every symptom, during the whole of which period the patient is cautiously to avoid any exposure to cold.

In the Contributions of Medical Knowledge, published by Dr. Beddoes, there is a curious paper by Mr. Addington, of West Bromwich, on the cure of gonorrhœa virulenta by large doses of the oxymuriate of mercury. Three grains of this are dissolved in an ounce of rectified spirits of wine; half of this solution is taken undiluted at going to bed; it produces a copious salivation for an hour and a half, or longer, during which the patient spits a quart. Some aperient salts are to be taken on the second day after this operation; and on the evening of that day he is to repeat

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* 23. ℞ Hydrargyr. Submur·
Camphoræ, āā ℈j.
Opii, gr. xij.
Syrup. q. s. M.
Fiant pilul. xx. quarum j. vel ij. sumat mane et nocte quotidie.

† 24. ℞ Hydrargyr. Oxydi Rubri, ℈ss.
Opii, gr. v.
Extract. Cascaril. ℈j.
Syrup. q. s. M.
Fiant. pilul. xij.—capiat j. vel ij. bis in die.

* 23. Take Submuriate of Mercury,
Camphor, of each one scruple.
Opium, twelve grains.
Syrup, a sufficiency.
Let twenty pills be made out of the mass, of which one or two may be taken every morning and night.

† 24. Take Red Oxyd of Mercury, half a scruple.
Opium, five grains.
Extract of Cascarilla, 1 scruple.
Syrup, a sufficiency.
Mix them, and form them into twelve pills.

the draught, and the salts on the day but one following. Mr. Addington found that three or four doses frequently removed a venereal gonorrhœa in a few days without any disagreeable consequence, and was informed that hundreds have been cured by it.

It will be difficult to account for the action of this medicine in any other way, than by supposing it to be owing to the consent of parts between the throat and the urethra.

Upon the plan of diminishing the irritability of the system, as well as of the parts particularly affected, opium has been much used in gonorrhœa, not only by injecting a watery solution of it frequently up the urethra throughout the course of the day, but likewise by giving it by the mouth every night towards bed-time. This practice is certainly attended with very good effects, and ought therefore to be adopted more generally than it is.

In consequence of a sympathy of the parts affected, or the having imprudently used any severe exercise, or had too early recourse to strong astringent injections, it sometimes happens that inflammation and swelling attack one of the testicles, showing themselves at first by a similar affection of the spermatic vessels and epididymis.

In these cases we must rigidly pursue an antiphlogistic mode of treatment, by bleeding from the system where an inflammatory diathesis seems to prevail, and by topical bleeding by means of several leeches where it does not; besides which, we should give the patient a brisk purge* every third or fourth day, and confine him to a very spare regimen, and to a recumbent posture.

An efficient method of drawing blood from the part affected is by opening the enlarged scrotal veins with a lancet. A greater quantity may in some cases be thus taken, with less trouble to the patient than by the application of many leeches; independent of which it is advantageous in an economical point of view, particularly in hospital practice. It sometimes happens, however, that even when the part is much swoln, there are no veins sufficiently apparent to allow of an abstraction of blood in the way just mentioned.

To assist in abating the swelling and inflammation, the parts may be bathed several times a day with some discutient and refrigerant lotion,† and afterwards be covered with small pledgets dipped in the same, which are to be renewed as often as they

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* 25. ℞ Pulv. Jalapæ, ʒss.
Hydrargyr. Submuriat. gr. v. M.
ft. Pulvis.

† 26. ℞ Ammon. Muriat. ʒij.
Acid. Acetic. Dilut. f. ʒij.
Spirit. Camphoræ, f. ʒj.
Liquor. Plumbi Subacet. f. ʒss. M.
ft. Lotio.

* 25. Take Powder of Jalap, half a drachm.
Submuriate of Mercury, five grains.
Mix them for a dose.

† 26. Take Muriate of Ammonia, two drachms.
Distilled Vinegar, two ounces.
Camphorated Spirit, one ounce.
Solution of Subacetate of Lead, half a drachm.
Mix them for a lotion.

become dry or warm. By night a poultice of linseed or rye-meal, moistened with a solution of the plumbi acetas, may be kept to the part; but it is also to be applied cold; and in order that the testicles may not at any time hang by their own weight, the scrotum should be supported by a suspensory bandage.

During the continuance of the inflammation and swelling, it will be advisable to omit the use of mercury, and to employ in its stead cooling medicines, such as the nitrate of potass;* and in order to allay irritation, we should give an opiate every night at bed-time.

Emetics have been much administered in inflammation of the testicle, but they seem to afford most relief in those cases where the swelling is unaccompanied by any hardness. Indeed, so powerful is the effect of emetics in some cases of swelled testicle, that they have been frequently found efficacious, when the repeated application of leeches, purgatives, and discutient lotions have failed. The cupri sulphas may be employed as advised under the head of Phthisis, when we judge vomiting to be proper; or we may give tartarized antimony twice a day, in such doses as to produce some slight degree of vomiting.

Where a hardness remains after the inflammation and swelling have subsided, poultices of hemlock, and its use internally, joined with the cinchona bark, together with the application of mercurial unction every night, will be the most likely remedies to remove it.

Almost every case of inflamed testicle will terminate favourably,

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Vel,

27. ℞ Liquor. Ammon. Acetat.
Spirit. Rectif.
Aq. Distillat. āā f. ℥ij. M.

Vel,

28. ℞ Plumbi Acet. ʒss.
Aq. Rosæ, f. ℥iv.
Tinct. Opii, f. ʒij. M.

* 29 ℞ Potassæ Subcarbonat. ℈j.
Succ. Limon. f. ℥ss.
Aq. Fontan. f. ℥j.
Potassæ Nitrat. gr. xv.
Vini Antimon. Tart. ♏ x.
Syrup. Simpl. f. ʒij. M.

ft. Haustus, ter de die sumendus.

Vel,

30. ℞ Potassæ Supertart. ʒiij.
—— Nitrat. ʒij. M.

Et in dos. x. divid. quarum unam sumatter quaterve in die.

Or,

27. Take Solution of Acetate of Ammonia,
Rectified Spirit,
Distilled Water, of each two ounces.

Or,

28. Take Acetate of Lead, half a drachm.
Rose Water, four ounces.
Tincture of Opium, two drachms.

* 29. Take Subcarbonate of Potass, one scruple.
Lemon Juice, half an ounce.
Pure Water, one ounce.
Nitrate of Potass, fifteen grains.
Wine of Tartarized Antimony, sixteen drops.
Syrup, two drachms.

Mix them for a draught, to be taken thrice a day.

Or,

30. Take Supertartrate of Potass, three drachms.
Nitrate of the same, two drachms.

Mix them, and divide the whole into ten doses, of which let one be taken three or four times a day.

by paying proper attention to this plan; but when, either from improper treatment, neglect, or any untoward circumstance, a suppuration has ensued, the matter must be discharged by making an opening into the most dependent part of the abscess, and the remainder of the treatment must be the same as in collections of pus in other parts of the body.

The matter discharged in gonorrhœa, being in some instances of an acrid and virulent nature, is apt by lodging between the prepuce and glans penis in men, and on the labia pudendi in women, to occasion an excoriation and ulceration in these parts. To prevent such consequences, it will be right to pay strict attention to cleanliness, by washing them at least twice a day. When they take place, we must employ lotions* of a solution of plumbi acetas, or the liquor plumbi subacetatis, sufficiently diluted with water, suspending the penis at the same time to the abdomen, by means of a proper bandage.

Warty excrescences now and then appear about the external organs of generation in both sexes, as a consequence of gonorrhœa and chancres. They are of various sizes, appearance, and consistence, adhering sometimes by a narrow base and sometimes by a broad one. Wherever a ligature cannot be applied round them, from the broadness of their base, or their being very numerous, they may either be touched with caustic, or be destroyed by the frequent application of other stimulants, such as acetic acid—(see Lues,) a solution of the oxymuriate of mercury with ammonia muriata, or savine powder. This last has been found to succeed when all the other usual remedies have failed. It acts by producing a considerable discharge from the surface, by which the excrescence is gradually wasted, without causing an eschar like a caustic application. Moreover, it gives little or no pain, and is never productive of inflammation, which not unfrequently follows the use of either a solution of the oxymuriate of mercury, or pure potass, or any of the potent caustics.

In consequence of inflammation, certain parts of the urethra are apt to become contracted and to occasion strictures, which cause the urine, instead of flowing in a free and direct stream, to split into two, or to be voided drop by drop. So constant is inflammation the forerunner of stricture, that it may be held as a point well established by evidence, that the origin of all strictures in the urethra is in consequence of inflammation, as, that adhesions of the pleura are produced by it. In what is termed spasmodic stricture, it has been well ascertained that the spasm is not in the stricture itself, but it is a spasmodic action of the muscles surrounding the urethra.

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* 31. ℞ Spirit. Camphoræ, f. ʒij.
Liquor. Plumbi Subacet. f. ʒj.
Aquæ Distillat. Oi. M.
ft. Lotio.

* Take Camphorated Spirit, two drachms.
Solution of Subacetate of Lead, one drachm.
Distilled Water, one pint.
Mix them for a lotion.

The most usual way to remove strictures is, by a regular and long-continued use of a bougie; and if made of the elastic gum, bent like a catheter, will be preferable to those in common use. Were all such as are afflicted with these complaints not to neglect this remedy, we should seldom, if ever, meet with those dreadful cases of suppressed urine which occur in practice.

In making use of bougies, it will, however, be necessary to attend to the following rules:—

1st, To begin with one of a moderate size, and so to increase it very gradually; but previous to its introduction, if made of wax and oil, as those in common use are, I would recommend it to be held near a gentle fire for a short time, to soften it, and then bend it in the shape of a catheter, so as to adapt it to the curvature of the urethra, by which means its passage will be greatly facilitated.

2dly, To employ no force in introducing it; but where we meet with great resistance, to be content with merely suffering its point to press against the stricture for a short time each day, with the hope that by a perseverance in this plan a dilatation of the contracted part may at least be effected.

3dly, To wear it at first only for about half an hour, gradually increasing the time as the parts can bear it without irritation.

4thly, Never to pass it into the bladder, except at first to ascertain the extent of the disease, but merely to carry its point some small distance beyond the stricture or strictures.

5thly, To guard against its slipping into the bladder, by bending its end, and tying it with a cotton thread fastened to the penis.

6thly, To avoid all exercise during its introduction; and,

7thly, To continue its use for a considerable length of time after the disappearance of the stricture, and again to have recourse to it on the least return of obstruction.

English surgeons almost invariably adopt these prudent and cautious rules in the treatment of strictures, whereas those of France seem to consider stricture as a disease to be cured by main force, the gum elastic bougie or the conical catheter* being the only means employed by them for its removal; when the case admits of either of these instruments being made to reach the bladder.

In those cases where a bougie even of the smallest size cannot be passed, as likewise in those which are of such long standing as to preclude the hope of a perfect recovery from its use, it has been proposed to make use of caustic. This was first advised by the late Mr. John Hunter, and since his time has been much urged by Sir Everard Home. It appears from the report of this gentleman, that Mr. Hunter, fully sensible of the many inconveniences which attended the application of caustic to strictures in the urethra, by means of a canula, as at first practised, had for some years previous to his death adopted a more improved mode of applying it; and

* See Sketches of the Medical Schools of Paris, by Mr. Cross, p. 111.

that he himself has continued to make use of it ever since, without having ever found it (as we are informed) to be attended with disadvantage.

This improved mode of applying the caustic is thus managed: take a bougie, of a size that may readily be passed down to the stricture, and insert a small piece of lunar caustic into the end of it, letting the caustic be even with the surface. This should be done some little time before it is required to be used; for the materials of which the bougie is composed become warm and soft by being handled in inserting the caustic; and therefore the hold the bougie has of the caustic is rendered more secure after it has been allowed to cool and harden.

This bougie, so prepared, is to be oiled and made ready for use; but previous to passing it, a common bougie of the same size is to be introduced down to the stricture to clear the canal, and to measure exactly the distance of the stricture from the external orifice; this distance being marked upon the armed bougie, it is to be passed down to the stricture immediately upon withdrawing the other. When it is found in contact with the obstruction, it is to be steadily retained there with a moderate degree of pressure at first, and less as it is longer continued, since the bougie becomes soft by remaining in the urethra, and readily bends if the pressure is too great.

The period it is to remain must depend a good deal upon the sensations of the patient, and the length of time the parts have been diseased; but on the first trial, it should not be for more than a minute, as it then gives greater pain than on any future application. The pain produced by the caustic is not felt so immediately as it would be natural to expect: the first sensation arises from the pressure of the bougie on the stricture, a little after there is the feeling of heat, and then the parts become painful.

As soon as the caustic begins to act, the surgeon who applies it is often made sensible of it by the smaller arteries of the parts beating with unusual violence, which is very distinctly felt by the finger and thumb that grasp the penis.

After the caustic has been withdrawn, it is desirable that the patient should make water, as in that way any of the remains of the dissolved caustic are washed off; but it sometimes happens that no water will flow at the first effort. When that is the case, it should not be urged, as it is not of any great consequence.

It happens not unfrequently, that at the first time of making water some blood passes along with it; this is also of no bad consequence, but is rather favourable; as when it has occurred, the stricture usually proves to be so far destroyed, that at the next trial the bougie passes on to the bladder. Every other day appears, in general, to be as often as it is prudent to apply the caustic.

By this mode of arming the bougie, strictures in the membranous

part of the urethra may have caustic applied to them, which cannot be done by a silver canula, unless made flexible, and even in that state it is liable to many objections.

It appears that Mr. Hunter made use of caustic only in cases of impervious stricture; but Sir Everard Home, from a number of facts, thinks it established as a general principle that the irritable state of a stricture is kept up, and even increased, by a use of the bougie, but lessened, and entirely destroyed by the application of lunar caustic: hence he recommends the use of the caustic in many cases likewise of spasmodic stricture, in preference to the unarmed bougie. In speaking of the comparative effects of the bougie and caustic, he observes, that from what he has seen, he thinks he may safely infer, that the caustic is a mode of cure more extensively useful, milder, quicker, more effectual, and more permanent than the bougie.

So general and indiscriminate a use of caustic as is here recommended by Sir Everard Home, appears to me to be injudicious, and likely, in many instances, to be productive of injurious effects.

No doubt the caustic bougie may be, and often is applied to strictures without exciting any particular inconvenience or trouble, but still the application of so active a remedy to so delicate an organ will sometimes give rise to disagreeable symptoms; and accordingly, during the employment of it, various circumstances will frequently occur to embarrass or even disappoint our hopes of a cure. Most commonly the pain excited is not very acute; but occasionally it is severe, owing to a degree of inflammation and tenderness in the urethra at the time the caustic is applied.

The best means to remove any unpleasant symptoms will be a light diet, rest, opiates, injections, cooling laxatives, and the warm bath. Should a suppression of urine be the consequence of the application of the caustic, the same means ought to be resorted to. Should a swelling of the testicles arise, it will be proper to desist from the remedy, and to employ the usual means for reducing this affection, such as topical bleeding with several leeches, rest, an antiphlogistic regimen, cooling laxatives, and saturnine applications, with a suspension of the parts. But one of the most troublesome circumstances attending the employment of caustic for the cure of strictures, and which is apt more or less to embarrass the surgeon and to alarm the patient, is a profuse hæmorrhage. The quantity of blood lost is sometimes very considerable, and the hæmorrhage may return from time to time, for several days. Nothing, however, is to be apprehended from the quantity lost, except a temporary faintness and debility. To check its profuseness, we may employ cold applications, rest, internal astringents, and laxatives. Gentle pressure in the perinæum will frequently put a stop to the discharge, and in severe cases we can use some slight styptic injection, such as a solution of alum, or the sulphate of zinc.

Where a paroxysm of fever attends the application of the caustic bougie, and the patient is seized with rigors, succeeded by heat and profuse sweating, as now and then occurs, the only treatment necessary is the administration of a smart purge, followed perhaps by a full dose of opium, and exciting and keeping up a free perspiration by the use of warm diluent drinks.

In very irritable habits, it might probably be a good plan to give a full dose of opium an hour or so previous to the application of caustic to the strictured parts.

The practice of applying caustic should, I think, be confined to such strictures of the urethra as are either utterly impervious, or so contracted as to be incapable of dilatation by the common or gum bougie; for the urethra, even in its healthy state, being tender and irritable, and connected with parts of great importance in the system, all violent remedies ought to be applied to it with the greatest caution. The invariable rule to be followed, should be to endeavour to dilate all strictures by means of an elastic gum or common bougie before any attempt is made to effect their removal with caustic.

The bougie armed with caustic should be kept as a remedy of reserve to be employed in those more difficult and complicated cases in which the former has failed, or to which it is inapplicable. It must, however, be admitted, that the dilatation effected by the unarmed bougie is seldom more than a temporary cure, particularly in strictures of long standing; for although the passage may be dilated sufficiently for the urine to pass, yet there remains the original tendency for contraction, which generally returns sooner or later on any exposure to cold or act of intemperance.

Two other methods of applying caustic to strictures in the urethra, where such an application seems necessary, have been proposed, the one by Mr. Cartwright, and the other by Mr. Whately, and these were fully noticed in the first edition of this work; but as after a fair trial they have been found to possess no superior advantages over the method recommended by Sir Everard Home, and are more complicate, I have thought it unnecessary to give a particular detail of them here.

In a second tract more lately published by Mr. Whately on strictures in the urethra, he tells us that he has discovered a more efficacious, and at the same time a less hazardous and painful remedy for the disease in question than lunar caustic. It is the potassa fusa; and with this he directs a bougie to be properly armed, but much in the same manner as recommended by Sir Everard Home. This innovation has not, however, been looked upon by the best surgeons as an improvement; for whatever tends to weaken the action of the caustic, will at the same time destroy or lessen its effects on the stricture.

It has been considered by one or two practitioners as an important distinction between the use of the potassa fusa and of the argenti nitras, that a certain lubricity is given to the urethra by the

solution of the first forming a soap with the secretions, so as readily to admit the bougie into the narrow part of the canal; whereas the argenti nitras coagulates the secretions, and when it has been applied to a stricture with the intention of burning it and acting as a caustic, the part touched by it becomes dead, rough, and no longer smooth and lubricated.

A new method of treating strictures in all parts, but more particularly those in the urethra, has been recommended by a late writer, which is by distending this during the operation with a liquid injected through a catheter from a bag attached to its outer extremity. The instrument he* has called a dilator, and it consists of oiled silk lined with the thin gut of some animal (that of the cat being thought preferable on account of its thinness and strength,) to make it air-tight, and then attached upon the extremity of a small canula, by which it is distended with water or air from a bag or syringe at the outer end with a stop-cock or valve to keep in the air when received.

Caruncles and excrescences in the urethra sometimes arise as a consequence of gonorrhœa, but they are usually situated towards its extremity, and rarely any length within it. They are to be removed by the bougie and caustic, as well as strictures.

Where a spasmodic constriction of the urinary passage ensues in gonorrhœa (which is known by its suddenly taking place without any previous appearance of interruption, and its being as suddenly removed), we must have recourse to emollient applications, such as fomenting with flannel cloths wrung out in a warm infusion of chamomile-flowers and bruised poppy-heads, and rubbing the penis with tinctura opii and æther combined. Where these fail, a warm bath, together with the internal use of opium, in considerable doses, by the mouth as well as in clysters, must be employed. A combination of the submuriate of mercury with opium has been attended with a very happy effect in many cases of a retention of urine in gonorrhœa from spasmodic strictures in the urethra. Two grains of the former, with one of the latter, may be given every second hour for six hours, unless the desired effect is produced sooner. To prevent any return of the complaint, a pill of the same nature may be continued night and morning for a few days.

In suppressions of urine arising from spasm, it is observed under the head of Ischuria that the profession is indebted to Mr. Cline for the discovery of a very efficacious remedy. This is the tinctura ferri muriatis, which we are instructed to give in doses of ten drops, repeated every ten minutes, until some sensible effect is produced. After six doses the urine usually flows freely, the patient previously becoming a little sick and faint.

If we are foiled in overcoming the spasmodic contraction by these means, we may endeavour to introduce an elastic gum catheter, but no violence should be used in passing it.

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* See Treatise on Strictures, by Mr. James Arnott, p. 73.

In spasmodic stricture, where the irritability of the urethra is so considerable as to forbid the introduction of a common bougie, this may be readily lessened by touching the point of the instrument slightly with liquor potassæ, after it has been oiled and is ready for introduction. The effect of potass employed in this manner upon an irritable urethra is often astonishing, and a full sized bougie may be thus easily got into the bladder, which had been previously regarded as impracticable.

The enema nicotianæ* has proved eminently useful in many cases of suppressed urine arising from spasm, where all other means have failed: the effect is often powerful and decided; the patient becomes faint and sick, the pulse sinks, his whole body is bathed in perspiration, and in a few minutes the urine will often flow in a moderate stream.

In consequence of the repeated attacks of gonorrhœa, and the debility of the parts occasioned thereby, it not unfrequently happens that a gleet or small discharge remains behind, after all danger of infection has ceased. In recent cases, the disease may in general easily be removed; but in those of long standing, where the mucous glands have suffered much relaxation, or where there is either a stricture or callosity, it may continue for life in spite of our best endeavours to cure it, having, however, certain intervals.

This is, nevertheless, to be attempted by a frequent use of astringent injections, and even by those of a stimulant nature, as acrid solutions of ammonia muriata, mercury, verdigris, balsam of Copaiba, &c.,† employing the last class more seldom, however, than the former; as likewise by forming an issue, or putting a seton in or near the perinæum, thereby diverting the discharge elsewhere. Besides using injections, we may employ remedies internally.‡ To give vigour to the whole system, and restore the

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* 32. ℞ Fol. Nicotian. ʒss.—ʒj.
Aq. Bullient. f. ℥xj. Col. post semihoram.
ft. Enema.

† 33. ℞ Hydrargyr. Oxymuriat. gr. ij.
Ammon. Muriat. gr. x.
Aq. Distillat. f. ʒx. M.
Inject.
Vel,
34. ℞ Bals. Copaib. f. ʒij.
Mucilag. Gum. Acaciæ, f. ʒj.
Misceantur in mortario, et adde
Liquor. Calcis, f. ʒv.
Tinct. Cantharid. ♏ viij. M.
ft. Inject.

‡ 35. ℞ Bals. Copaib. cochl. min. bis terve in die, paux. sacch. albi.

* 32. Take Leaf Tobacco, half a drachm to one drachm.
Boiling Water, eleven ounces.
Infuse them for half an hour, and strain off the liquor for a clyster.

† 33. Take Oxymuriate of Mercury, two grains.
Muriate of Ammonia, ten grains.
Distilled Water, ten ounces.
Mix them for an injection.
Or,
34. Take Balsam of Copaiba, two drachms.
Mucilage of Gum Acacia, one ounce. Mix them in a mortar,
And add
Lime Water, five ounces.
Tincture of Spanish Fly, twelve drops.
To be used as an injection.

‡ 35. Take Balsam of Copaiba, a small tea-spoonful twice or thrice a day, upon white sugar.

tone of the parts at the same time, the patient should enter on a course of chalybeates, as advised under the head of Dyspepsia, assisted by cold bathing, country air, and a restorative diet.

The tinctura ferri muriatis, when steadily employed, frequently produces very permanent benefit in gleets. From twenty to thirty drops may be given for a dose thrice a day in an ounce of the decoctum cinchonæ. No remedy proves more efficacious, however, than the prudent administration of cantharides.*

In every case where the disease is obstinate and strictures suspected, the introduction of a bougie will be proper to ascertain it; and when satisfied as to its real existence, we ought to advise a perseverance in the use of bougies. The caustic, in the manner practised by Sir Everard Home, may be resorted to as the final resource, should these not prove effectual.

CHANCRES.

The second local form under which the syphilitic poison has been mentioned to show itself, is that of a chancre: this is distinguished by a want of disposition to heal, a thickened base, and circumscribed inflammation, with other characteristic marks already noticed.

The parts most apt to be affected with these ulcerations in men, are the prepuce, the frænum, at the orifice of the urethra, and in the angle between the glans and body of the penis; and in women, about the labia, nymphæ, and clitoris; but in some instances they have extended into the vagina, and even so far up as the os uteri. Syphilitic matter, by being applied to other parts of the body covered with a mucous membrane, such as the lips, nostrils, &c. may give rise to chancres there also; but being most usually applied to the organs of generation, in consequence of an intercourse between the sexes, these are generally the seat of such ulcers.

A chancre makes its appearance either with a slight inflammation, which afterwards ulcerates; or there arises a small pimple or

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Vel,

36. ℞ Terebinth. Canadensis, f. ℥ij.
Hydrargyr. Submuriat. ℈j.

Pulv. Cinchon. ℥j. M.
Fiant pilul. xl. Capiat iij. vel iv. mane et vespere.

Vel,

37. ℞ Zinc. Sulphat. ℥j.
Pulv. Rhei, ℈j.
Terebinth. Chiæ, q. s. M.
Fiant pilulæ xx. quarum j. vel ij. sumat mane et nocte.

* 38. ℞ Tinct. Cantharidis, f. ℥i.

Sit dosis ♏ xvj. ter die ex quovis vehiculo.

Or,

36. Take Balsam of Canada, two drachms.
Submuriate of Mercury, one scruple.
Powder of Peruvian Bark, one drachm. Mix them, and form the mass into forty pills, of which three or four may be taken morning and evening.

Or,

37. Take Sulphate of Zinc, one drachm.
Powder of Rhubarb, one scruple.
Cyprus Turpentine, a sufficiency to form the mass. Divide this into twenty pills, whereof let one or two be taken morning and night.

* 38. Take Tincture of Spanish Fly, one ounce.
The dose may be twenty-four drops thrice a day in any vehicle.

pustule filled with a transparent fluid, which soon breaks and forms into a spreading ulcer. The period at which it makes its appearance after infection is very various, being most commonly in five or six days, but in some cases not till after the expiration of as many weeks.

As there is always a risk that an absorption of matter may take place from a chancre, and possibly very speedily, it will not only be necessary to attend to the ulcer, but likewise to secure the constitution by a use of such remedies as are well known to possess the power of counteracting the syphilitic poison.

In cases of a very recent nature, chancres may often be removed by the application of caustic, or by washing them with a weak solution of hydrargyri oxymurias in rectified spirit diluted; but where they are extensive, and have been of some standing, it will be necessary to dress them daily with ointments composed of hydrargyri nitrico-oxydum, or the submuriate of mercury, spread upon fine lint. When much pain and irritation prevail, opiates will have a good effect.

In some cases of obstinate chancres of an inveterate and corroding nature, which have not benefitted by the dressings just advised, much advantage has been derived from the application of a poultice composed of the inner soft part of a loaf of wheaten bread, moistened with a solution of the sulphate of soda in boiling water, in the proportion of one ounce of the former to four pounds of the latter.

To give chancres a disposition to heal kindly, it will be highly necessary to attend strictly to cleanliness. Mr. John Hunter, in his Treatise on the Venereal Disease, seems however to have thought this unnecessary; for he says he is inclined to believe that no matter of whatever kind can produce any effect on the part that formed it; neither can the matter of any sore, let it be what it will, ever do hurt to that sore; and from thence he draws the conclusion, that the wiping or washing away matter under the idea of keeping the parts clean, is in every case absurd.

Where chancres exist along with phymosis, the cure will be both tedious and uncertain, and cannot often be effected by simply throwing up injections of a cleansing nature from time to time between the prepuce and glans. The more certain method will be, to make an incision through the former, or to perform the operation of circumcision.

Chancres sometimes appear on the nipples of women who suckle infected children, and excite much pain. To lessen the irritability of the parts that are diseased, it will be proper to bathe the ulcers twice or thrice a day with a strong solution of opium in water, and afterwards to dress them with the unguentum cetacei, to which a proper quantity of hydrargyri submurias has been added.

Besides topical applications, it will be necessary to secure the constitution from becoming affected at some after-period in con-

sequence of an absorption of the matter from the ulcers, by having recourse to mercury, which must be used either externally or internally, as shall be found most suitable to the constitution and convenience of the patient. In employing it we are however to avoid exciting any degree of salivation, and therefore we are to introduce it gradually into the system, carefully watching its effects. The length of time it ought to be used will depend on the virulence of the disease and other accidental circumstances; but at any rate we should never totally desist from its use until the expiration of several days after the disappearance of the ulcers.

Where erysipelatous inflammation of the penis supervenes on chancre, mercury should neither be exhibited internally, nor be used externally in any form whatever, until it has subsided.

In consequence of the irritation of venereal virus in a debilitated constitution, aggravated perhaps by an excessive or injudicious exhibition of mercury, more particularly in a crowded hospital, it not unfrequently happens that chancres become phagedenic. They commence with a livid redness of the part, succeeded speedily by vesication and ulceration, which extends laterally, and sometimes penetrates deeply. The ulcer has a corroding appearance, is highly painful, discharges a great quantity of matter, and is often attended with fever. In all such cases stimuli would be injurious, and when used have been known to re-excite the morbid actions of the sore in such a degree as to occasion the death of the patient: mercury must therefore be omitted.

The ulcerated parts should be well fomented morning and evening with flannel cloths wrung out in a decoction of bruised poppy-heads and the powder bark of cinchona, and afterwards be covered with an emollient poultice mixed with carbon (see Gangrene.) Internally we may give opium freely, and at stated intervals; as likewise some light preparation of cinchona bark joined with sarsaparilla and a mineral acid. Wine in moderate quantities will also be proper. The patient, if in an hospital, should be removed to a purer atmosphere.

A peculiar eruptive disease arising from the exhibition of mercury has attracted the attention of some practitioners in Ireland;* and although of frequent occurrence, no doubt, in the London hospitals, it does not appear to have been particularly noticed by any surgeon belonging thereto, except Mr. Pearson.† Mr. Benjamin Bell, indeed, in his Treatise on the Venereal Disease, very accurately describes it,‡ although from the manner in which he speaks of it, the cases he had seen could not have been of a severe nature.

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* See a Description of the Mercurial Lepra, by Dr. Moriarty; and an Essay on a peculiar Eruptive Disease arising from the Use of Mercury, by Mr. George Alley.

† See Observations on the Cure of Lues Venerea.

‡ See his Treatise on Gonorrhœa Virulenta and Lues Venerea, vol. ii. p. 288.

The disease is generally supposed to be produced by exposure to cold while the system is under the influence of mercury; yet as its occurrence is infinitely too rare to be the necessary consequence of so common a cause, probably a peculiar idiosyncrasy, or unknown state of the constitution of the person affected, may be necessary for its production. It seems nearly allied to the genus erysipelas, and has by some been named the erythema mercuriale.

This complaint sometimes shows itself by a heat and itching about the scrotum and the upper and inner parts of the thighs, which on examination appear faintly red, and are somewhat rough. On other occasions, the heat, redness, and roughness are first observable in the groins, and at the bend of the arms. In most cases the anterior parts of the body are affected before the posterior, and the lower extremities suffer prior to its appearance on the trunk of the body; yet there is not so much of constancy and regularity in the order in which it proceeds, that the upper extremities are not occasionally attacked as early as the thighs. The redness, beginning on the extremities, makes a slow and gradual progress over the whole body, no part being exempted from it. Its increase is attended with great tenderness of the skin, a troublesome itching, and an evident tumefaction of the parts affected. The swelling is not unlike that which attends erysipelas, and it has been as considerable as that which accompanies the small-pox. The temperature of the skin is increased, the tongue is white, and the pulse frequent; but neither the functions of the stomach, nor of the sensorium commune, are evidently disturbed by this complaint.

The lepra mercurialis is always a vesicular disease, although the vesicles, which contain a pellucid fluid, are, at their first appearance, so small that they cannot easily be distinguished from papulæ without the aid of a convex glass: they are then seen to be distinct, each vesicle surrounded by a circle of redness; and if they are not ruptured at an early period, they acquire the size of a large pin's head, at which time the contents are opaque. The rupture of the vesicle is succeeded by a discharge of a thin acrid fluid that irritates the surface which it touches, and greatly increases the patient's sufferings; and as the disease proceeds, he is excoriated almost from head to foot. The quantity of the discharge is in proportion to the extent of the excoriated surface; it is always considerable, and renders the linen which absorbs it stiff and unyielding. As the fluid discharged becomes thicker and more adhesive, it emits an offensive scent similar to that which arises from the secretions of the sebaceous glands when under the influence of the disease.

The lepra mercurialis does not invade the whole surface of the body at once, but occupies different parts of it successively, so that the several portions of the skin affected by it exhibit a more or less advanced state of the disease at the same time;

hence while the part first attacked is discharging the adhesive matter, the thin acrid fluid may be flowing from another portion. From this representation it must be obvious that the exact period observed by this disease cannot be easily ascertained; nor indeed does it appear to be limited by any regular term of duration. When it has affected but a small part of the body, it often terminates in ten or twelve days; but when it has been universal, the patient seldom recovers completely in less than six, eight, or ten weeks.

When the discharge ceases, the loosened cuticle acquires first a pale brown colour, and then becomes nearly black, separating in large flakes, and leaving a faint redness on the exposed surface. The first desquamation is often succeeded by a second, or even a third; but in these latter desquamations the cuticle is more of a white colour, and separates in farinaceous-like scales, so that the surface of the skin appears as if it were covered with a white powder. The effects of the lepra mercurialis are not, however, confined to the destruction of the epidermis. All the hair of the body, the beard, the hair under the axillæ, and on the regio pubis, and the greater part of the hair of the head and eyebrows, have been known to separate, and leave the parts as smooth as in a state of infancy. The disease ceases after a time, but it is doubtful whether any remedies have the power of interrupting its regular course, or of abridging its duration.

The mode of treatment, however, which has been recommended consists in desisting from the further use of mercury, and in employing such remedies as will serve to support the patient without increasing fever, and such topical applications as may lessen the irritation arising from the perpetual loss of skin. Keeping the bowels open with saline purges; exciting a gentle determination to the surface of the body by diaphoretics; allaying irritation by means of an opiate at night; and frequent warm bathing will be proper in most cases. Where the disease assumes a putrid type, the bark of cinchona, with wine and some of the mineral acids, may be necessary. Starch powder, meal, or flour, will be the best topical applications. The use of saturnine applications to so large an exposed surface might be injurious.

A case which is recorded in the 18th No. of the Edinburgh Medical and Surgical Journal, by Dr. Rutter, of Liverpool, evidently shows, however, that mercury does not appear to be the sole cause of erythema in a high degree; for an eruption exactly of a similar nature took place when his patient had neither taken or used in any manner whatever a single particle of mercury.

We have hitherto been accustomed to look upon mercury as the only certain antidote against the venereal poison; but the nitric acid has been recommended as possessing a similar power. Dr. Scott, late of Bombay, seems to have been the first who employed it in syphilis. He tells us, he has had such extensive experience of its good effects, that he looks upon it to be by no means less effec-

tual than mercury in removing that disease in all its forms, and in every stage of its continuance; and from its not producing many of the inconveniences that arise from a use of that metal, he thinks it may in some respects be preferable. He observes, that mercury introduced into the circulation is attended with many disagreeable effects that render it often necessary to give over its use before it has answered the desired intention; but that the nitric acid may be taken a long time without any material injury to the health, and without producing inflammation and a flow of saliva, as from a use of mercury, but merely a temporary soreness in the gums and teeth.

On the recommendation of this gentleman, many practitioners have been induced to employ the nitric acid in the primary affections of syphilis, such as chancre, gonorrhœa, &c., and with some success. A few, however, have not made a favourable report of its effects; but more particularly Mr. Blair, at that period surgeon to the Lock Hospital.

The nitric acid at any rate may assist the use of mercurials as well as opium in the cure of venereal ulcers, although it should not be solely depended upon.

A matter of much importance, and worthy of notice, is, that the nitric acid has not been perceived to excite the action of other diseases, more especially scrofula; one of the greatest inconveniences attending a mercurial course, and by which many have had their constitution ruined, and others have lost their lives.

The sensible effects generally produced by a use of this acid are, an increase of the appetite, costiveness, the mouth and tongue becoming moist and white, with a slight soreness in the gums, the urine being of a light straw colour, clear, and increased in quantity; and the blood when drawn exhibiting the same appearances as under active inflammation, the coagulum being covered with a tough coat of coagulable lymph. In a few instances a burning sensation in the stomach has been observed: but this has only happened where the dose has been too great.

The mode of administering the nitric acid is to give one drachm of it diluted in a quart of an infusion of lemon-peel in warm water every day; and where this quantity does not seem to produce the desired effect, to increase it gradually to two or more drachms.

A course of this medicine requires no particular regimen or confinement.

Nitric acid is known to contain about four parts of vital air united to one of azote, with a certain proportion of water, and is supposed to remove the symptoms of syphilis by oxygenating the body to a considerable degree, producing thereby a general increased action of the whole system.

In a work* more lately published, Dr. Scott has inserted a paper

* See Journal of Science and the Arts of India, vol. i. p. 205—11.

explaining the reasons of the failure of this remedy in this country, and under the direction of other practitioners. He therein states, that the acid he employed was not pure nitric acid, but an impure acid containing an admixture of muriatic acid. He therefore now recommends the use of a compound acid containing equal parts of nitric acid and of the muriatic, which he administers internally, and also applies externally either as a wash or bath, largely diluted (say eight ounces of the acid to forty gallons of water,) until the gums are affected and ptyalism produced. He conceives every trial as quite inconclusive unless these constitutional effects occur. We are informed by Dr. Scott, that he found this acid particularly useful, even in this country, in that description of syphilis which is termed pseudo-syphilis, and which he considers as real syphilis combined with scrofula, called into action by the mercury employed for the cure of the syphilitic affection, and consequently not curable by mercury; although syphilis be still in the habit, but undoubtedly not produced by that remedy. It appears also, that sponging the skin with a solution of chlorine (water saturated with the nitro-muriatic acid) is attended with the same effects exactly as arise from the union of the acids, and employed in the same way. Dr. Scott gives no explanation of the modus operandi of the acids in conjunction, but thinks the power depends on the chlorine, as Sir H. Davy terms it.*

A BUBO.

It has already been observed, that between a local and constitutional affection there often arises a kind of intermediate state; and that, in consequence of an absorption of venereal matter from some surface to which it has been applied, the glands situated nearest to the parts thus affected are apt to become indurated, swelled, and inflamed, and so to give rise to a bubo; and the parts of generation usually coming first in contact with the matter, so the glands in the groins are the most general seat of this particular symptom. In most cases the syphilitic virus is absorbed from a chancre or ulcer in the urethra; but instances have occurred where a bubo has arisen without either gonorrhœa or any kind of ulceration, and where the matter appears to have been absorbed without any evident erosion of the skin or of the mucous membrane.

A bubo comes on with a pain in the groin, accompanied with some degree of hardness and swelling, and is at first about the size of a kidney-bean, but continuing to increase, it at length becomes as large as an egg, occasions the person to experience some difficulty in walking, and is attended with a pulsation and throbbing in the tumour, and a great redness of the skin. In some

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* See Sir H. Davy's Theory of Chlorine, London Medical and Physical Journal, vols xxxv. p. 111.

cases the suppuration is quickly completed; in others it goes on very slow; and in others again, the inflammatory appearances go off without any formation of pus. In a few instances the glands have been known to become scirrhous.

As many other swellings in the groin, such as a rupture, aneurism, lumbar abscess, and scirrhous affection of the glands may be mistaken for a bubo, it will always be advisable in doubtful cases to inquire whether or not the patient has lately been afflicted either with a gonorrhœa or chancre; and whether or not he has lately laboured under any other complaint that might have given rise to the swelling. It may likewise be advisable to attend to the progress which the tumour has made. By a due consideration and investigation of these circumstances, we cannot fail to form a just conclusion as to the real nature of the disease.

The following are the characteristics of a venereal bubo: the swelling is usually confined to one gland; the colour of the skin where inflammation prevails is of a florid red; the pain is very acute; the progress from inflammation to suppuration and ulceration is generally very rapid; the suppuration is large in proportion to the size of the gland; and there is only one abscess.

A bubo is never attended with danger where the inflamed gland proceeds on regularly to suppuration; but in particular cases it acquires an indolence after coming to a certain length, arising from a scrofulous taint; or, by being combined with erysipelas, it terminates in a phagedenic ulceration, and occasions a great loss of substance. This termination is, however, more frequently met with in hospitals than in private practice, and may partly be attributed to the contaminated state of the air of the wards wherein syphilitic patients are lodged.

The many inconveniences that ensue from allowing a venereal bubo to suppurate, should induce the practitioner to exert his utmost endeavours to prevent it from proceeding to such a state, and to occasion its speedy resolution or dispersion, if possible. To effect this, it will be proper, where the skin is occupied by much redness and inflammation, and the tumour by a throbbing, to draw off a sufficient quantity of blood immediately from the neighbourhood of the inflamed part during the first days of the disease by means of five or six leeches; the patient at the same time keeping his body open with some gentle laxative, using a very spare diet, and avoiding exercise. After the leeches have ceased to bleed, the parts may be wetted frequently throughout the course of the day with linen pledgets dipped in any of the sedative lotions advised for a swelling of the testicle, and by night be covered with a poultice of linseed or rye-meal, moistened either with a diluted solution of plumbi acetas, or the liquor plumbi subacetatis mixed with water.

If the tumour is unattended by any inflammatory symptoms, then topical bleeding may not be necessary, as probably the timely

application of mercurial ointment will be sufficient to disperse it. To give this its due and proper effect, it should not, however, be applied immediately upon the tumour, but be rubbed in on the inside of the thigh which is affected.

With regard to the quantity to be used, no express rule can be laid down, as some constitutions are readily affected by mercury, and others again are neither very quickly nor sensibly operated upon by it. In all cases it will be most advisable to begin with a small quantity of about the size of a hazel-nut, and so to increase it daily, until it comes to that of a moderate-sized walnut; which course is to be pursued every night until the tumour and induration have entirely subsided. Indeed if it is continued for some little time after the disappearance of both, it will be attended with a more certain effect.

Should the salivary glands become affected from a use of the unction, and any degree of salivation ensue, the patient ought immediately to discontinue it for some days, keeping his body open with gentle laxatives, and washing his mouth and throat frequently with a gargle composed of borax and honey* dissolved in water. The borax will not only act as an astringent, but will diminish the irritable state of the glands by its sedative power. To assist in lessening the irritation, it will be advisable, during a course of the unction, to give an opiate every night at bed-time.

If a bubo is too far advanced to be dispersed at the time that assistance is applied for, or obstinately continues its course to suppuration, in spite of our best endeavours to prevent it, we are then to assist the formation of proper pus by a full diet, and the application of emollient poultices. When this is formed, the tumour may be opened by a lancet or caustic, and the ulcer be brought to a proper digestion by suitable dressings and the internal use of mercury; taking care, however, not to carry it to the extent of producing salivation.

In those cases where there prevails a scrofulous disposition, it frequently happens that the sore does not heal kindly, but, on the contrary, spreads from the glands to the cellular substance, inflames the skin and contiguous parts, assumes a foul spongy appearance, and is accompanied by much pain and a discharge of a highly acrid matter; or should the ulceration heal in one part, it shortly afterwards breaks out in another, and becomes extensive.

Cases of this nature have been most successfully treated by

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* 39. ℞ Mel. Boracis, f. ℥j.
Aq. Fervent. f. ℥viij. M.
ft. Gargarisma.

Vel,

40. ℞ Aluminis, ℥ij.
Decoct. Hordei, Oij.
Mellis Rosæ, f. ℥ij. M.

* 39. Take Honey of Borax, one ounce.
Hot Water, eight ounces.
Mix them for a gargle.

Or,

40. Take Alum, two drachms.
Decoction of Barley, two pints.
Honey of Roses, two ounces.
Mix them.

fomenting the ulcerated parts twice a day with a strong decoction of the leaves of hemlock or of bruised poppy-heads, and then covering them with some emollient cataplasm, or that advised for chancres of a corroding and phagedenic nature. Where the ulcers have a fungous appearance, and discharge a thin acrid sanies, a little of the hydrargyri nitrico-oxydum may now and then be sprinkled over them, which will seldom fail to promote proper pus, and will by no means excite pain. As internal medicines, we may administer the bark of cinchona joined with the nitric acid, together with a decoction of mezereon, as in the decoct. sars. com.; which may be taken in the quantity of a quart daily.

Opium has been much employed in these untoward cases, partly on the supposition of its being possessed of some specific power in the cure of syphilis; but its utility seems to depend entirely on its narcotic quality, and its allaying the pain and irritation with which such sores are uniformly accompanied when the discharge is thin and acrid.

Hemlock has likewise been resorted to in these cases, and sometimes with advantage; it may therefore be taken internally. We may begin with about two grains of its extract in the form of a pill, and so increase the quantity daily, until it shows its effects on the system by producing a slight degree of giddiness.

Buboes in scrofulous habits, or when accompanied with erysipelatous inflammation, are very apt, particularly in hospitals where the air of the ward is much contaminated by many mercurial breaths, to degenerate into phagedenic ulcerations, which extend in a short time over a considerable space, and not unfrequently lay bare a large portion of the thigh and lower part of the abdomen, and even the testicles themselves. In cases of this nature the ulcerated parts should be well fomented two or three times a day with flannel cloths wrung out in a warm decoction of bruised poppy-heads and the cinchona bark, and afterwards be covered with an emollient poultice, and occasionally with the cataplasma carbonis mentioned under the head of Gangrene. The use of mercury should immediately be desisted from, employing in its stead large and frequently-repeated doses of the bark of cinchona, joined with sarsaparilla, together with opium, so as to keep up a constant effect.

The patient is at the same time to be supported with a generous diet and wine, and if possible, to be removed into a purer air, without which our endeavours may not be crowned with success.

In all cases of bubo, as well as of chancre and gonorrhœa, where mercury is used either internally or externally, it will be necessary for the patient to abstain from food of a high-seasoned and salted nature, and from all kinds of spirituous and fermented liquors; and as any exposure to cold, while under a course of this medicine, is very apt to bring on a salivation when it would not otherwise have arisen, he ought most carefully to avoid

getting wet, or exposing himself to moist cold air; taking the precaution, at the same time, to adapt his clothing to the season of the year.

THE CONSTITUTIONAL DISEASE.

A CONSTITUTIONAL taint is the third form under which it has been mentioned that the syphilitic poison is apt to show itself, and which always arises in consequence of the matter being observed, and carried into the circulating mass of fluids. The absorption of it may, however, take place in three ways:—

1st, It may be carried into the circulation without producing any evident local effect on the part to which it was at first applied:

2dly, It may take place in consequence of some local affection, such as either gonorrhœa, chancre, or bubo: and,

3dly, It may ensue from an application of the matter to a common sore or wound, similar to what happens in inoculating for the small-pox.

The most general way, however, in which a constitutional taint is produced, is by an absorption of the matter, either from a chancre or bubo.

When syphilitic matter gets into the system, some symptoms of it may often be observed in the course of six or eight weeks, or probably sooner; but in some cases it will continue in the circulating mass of fluids for a few months before any visible effects are produced. The system being completely contaminated, it then occasions many local effects in different parts of the body, and shows itself under a variety of shapes, many of which put on the appearance of a distinct disease. We may presume that this variety depends wholly on the difference of constitution, the different kinds of parts affected, and the different state these parts were in at the time the matter or poison was applied.

The first symptoms usually show themselves on the skin, and in the mouth and throat. When the matter is secreted principally in the skin, reddish and brownish spots appear here and there on its surface, and eruptions of a copper colour are dispersed over different parts of the body, on the top of which there soon forms a thick scurf or scale. This scurf falls off after a short time, and is succeeded by another; and the same happening several times, and at length casting off deep, an ulcer is formed which discharges an acrid fetid matter.

When the poison is secreted in the glands of the throat and mouth, the tongue will often be affected, so as to occasion a thickness of speech: and the tonsils, palate, and uvula will become ulcerated, so as to produce a soreness and difficulty in swallowing, and likewise a hoarseness in the voice.

The tonsils are more usually affected with syphilitic ulceration than the uvula or velum palati, though the affection may spread to these from the tonsils. The ulcer of the latter is an excavation, as

if a piece was scooped out; the sore has an uneven, jagged, foul appearance, with an erysipelatous redness on a hard, elevated, defined border; the ulcer is commonly covered with a whitish or brown slough; it is progressive, and, like the rest of the syphilitic symptoms, it is not curable by the powers of the constitution. Generally there is not much pain nor much enlargement attendant on this form of the disease; in other respects the sensations do not materially differ from those produced by ulceration of the throat proceeding from other causes.

If the disease affects the eyes, obstinate inflammation and sometimes ulceration, will also attack these organs.

The matter sometimes falls on deep-seated parts, such as the tendons, ligaments, and periosteum, and occasions hard, painful swellings to arise, known by the name of nodes.

When the disease is suffered to proceed, and is not counteracted by proper remedies, the patient will in the course of time be afflicted with severe pains, but more particularly in the night-time; his countenance will become sallow; his hair will fall off; he will lose his appetite, strength, and flesh; his rest will be much disturbed by night, and a small fever of a hectic kind will arise. The ulcers in the mouth and throat being likewise suffered to spread, and to occasion a caries of the bones of the palate, an opening will be made from the mouth to the nose; and the cartilages and bones of the nose being at length corroded away, this will sink to a level with the face.

It now and then occurs that primary symptoms followed by secondary ones present themselves, all closely imitating syphilis in its primary and secondary stages, and yet are not venereal. Symptoms resembling the secondary appearances of syphilis occur also without any preceding primary symptom, and turn out not to be venereal. In some of the cases the symptoms go off, and the patient gets well without any remedy: in others, common alteratives, such as a decoction of the woods, &c., have subdued the complaint. These complaints resembling the venereal disease, have been called by the name of cachexia syphiloidea, or pseudo-syphilis. Mr. Hunter* has remarked, that undescribed diseases, resembling the venereal one were numerous; and Mr. Abernethy† has drawn the attention of medical men by his remarks on diseases resembling syphilis.

Some constitutions will bear up for a considerable time against the disease, while others again will soon sink under the general weakness and irritation produced by it. If the disorder is recent, and the constitution not impaired by other diseases, a perfect cure may easily be effected; but where it is of long standing, and accompanied with the symptoms of irritation which have been mentioned, the cure will prove tedious, and in many cases uncertain, as the constitution and strength of the patient may not admit

* See his Treatise on the Venereal Disease. † See his Surgical Observations.

of his going through a course of medicine sufficient to destroy the poison; or his health may be in such a state as that only a very small quantity of mercury can be administered, even at considerable intervals.

The general appearances to be observed on dissections of those who die of lues, are caries of the bones, but more particularly those of the cranium, often communicating ulceration to the brain itself; together with enlargements and indurations of the lymphatic glands, scirrhus of several of the organs, particularly the liver and lungs, and exostosis of many of the hardest bones.

We have always been accustomed to consider mercury as the most certain antidote which we are acquainted with to the syphilitic poison, if judiciously employed or administered; from whence it is evident, that it will be necessary to have recourse to it in all cases where the system becomes tainted.

A class of practitioners has indeed lately started up, but particularly among regimental surgeons, to propagate the practice of attempting to cure syphilis and pseudo-syphilis, in all their Protean forms, without any mercurial preparation whatever: but I here beg leave to warn my readers against this new doctrine of trusting the cure of syphilis to sarsaparilla and such like remedies, in exclusion of mercury; as by such a practice we can never ensure the patient against secondary appearances of the disease.

The manner in which mercury removes syphilis is not yet satisfactorily ascertained; but in the opinion of some physicians, its action has been supposed to be chemical, the remedy combining with and destroying the virus; for it has been found that venereal matter applied by inoculation readily propagated chancre, but if mixed with a variety of mercurial preparations, no infection followed. The same effect of mercury over variolous matter has been noticed under the head of Inoculation for the Small-pox.

A few who rank as regular practitioners, besides those who act as quacks, fully sensible of the credulity of mankind, have endeavoured to make the vulgar believe, that by repeated examinations of the various productions of nature, they have each of them been able to discover a specific of a milder and more innocent nature than mercury for the venereal disease; and puffing handbills and advertisements daily announce that they can perform a radical cure without giving one grain of this mineral. A fair analysis of such of these nostrums as have been found at all serviceable in cases of this nature, has, however, early detected the falsity of these men's assertions, and proved beyond a possibility of doubt, that their new-discovered specifics are but some active preparation of mercury under a disguised shape.

Mercury may be introduced into the system in two ways, viz. either by an external application of it in the form of unction, or by giving some preparation of it internally; and it may be used to such an extent as to excite a salivation, or with such moderation

as only to give a tendency that way without suffering it to proceed so far, which in all cases will be the safest and most advisable plan. A third method, or alterative course, has been adopted by some practitioners; but although this may answer in primary affections, still it is by no means calculated to cure a confirmed lues.

There are some persons who are but little affected by mercury when applied externally to the body in the form of unction, as the absorbent vessels will not readily receive it; and there are others again whose internal absorbents will not take up a sufficient quantity to produce much effect either on the disease or the constitution; in which case the medicine passes off by the bowels, occasioning sickness at the stomach and griping pains.

To administer mercury judiciously, it ought therefore to be used in the way that is most suitable to the constitution of the patient. If on a trial the external application of it should produce no effect, either on the disease or constitution, then it should be administered inwardly: on the other hand, if its internal use fails, or produces any disagreeable effect on the stomach and intestines, then the external application ought to be substituted. Indeed, the skin, not being so essential to life as the stomach, is capable of bearing the application of mercury to it much better than the latter.

Although the quantity of mercury to be introduced into the system for the cure of lues must always be in proportion to the virulence of the disease, still in throwing it in we should neither proceed with haste nor violence, nor administer it in large or too frequent doses. In all cases it will be most prudent to begin with a small quantity, whether given internally or applied externally, and to increase it gradually, so as that the system shall be inured imperceptibly to the remedy; and as soon as the patient perceives a copperish taste in his mouth, with a great fœtor of breath, and a more than ordinary secretion of saliva, he ought then to proceed cautiously, and where necessary, wholly to desist from its use for a day or two, returning to it, however, as soon as the sensations have somewhat abated.

To use the medicine so as to give a tendency to salivation without proceeding any length, and to keep it constantly at that point during the whole course, is what he is to aim at.

Mercury, when introduced hastily and in large doses into the constitution, is apt to produce sensible and disagreeable effects upon particular parts of the body. It often occasions a swelling and inflammation in the mouth, tongue, and salivary glands, and thereby produces a profuse salivation. It likewise affects the stomach and intestines, and excites nausea, griping pains, and diarrhœa: and in some instances it produces profuse sweats and great debility.

Introducing mercury into the system, so as to give rise to any of these effects, will therefore be highly improper. Unless the

disease is proceeding so fast in its course as that it might be attended with some risk to the patient to wait until it was checked by introducing it gradually; or unless he is so irritable to the effects of mercury, as that even the smallest quantity used internally, or applied externally, affects his mouth, it will be wrong to occasion a salivation, as the cure will in general be rendered thereby more tedious, as well as uncertain, instead of being hastened.

To prevent a salivation it will be necessary, besides beginning with small doses of mercury and proceeding gradually, that the patient should take care not to stimulate the salivary glands, either by rubbing the skin over them, and keeping it too warm with flannel; or by applying any thing of a stimulating nature to the mouth; and he should likewise avoid as much as possible any exposure to cold; for this being applied while the body is in an irritable state from the use of mercury, is likewise apt to occasion inflammation and tumefaction of these glands, and so to give rise to a salivation. In a warm and well-regulated temperature, a mercurial course is more under the command of the practitioner, the remedy produces its effects with more certainty and safety, the malady yields more pointedly to its operation, and the several dangerous effects of incautious exposure to cold and damp are avoided.

The person who is under a course of mercury should abstain from all salted and high-seasoned meats, confining his diet to plain animal food that is of light digestion; to thin broths, preparations of sago, barley, and rice, custards, light pudding, milk, vegetables, ripe fruits, &c. He should avoid all spirituous liquors and vegetable acids; and if he drinks wine, the quantity ought to be very small, and always diluted with a proper proportion of water.

The late Mr. John Hunter seems, however, to have thought an attention to diet, under such circumstances, wholly unnecessary; for, in his Treatise on the Venereal Disease, he says that the manner of living under a mercurial course need not be altered from the common, because mercury has no action upon the disease which is more favoured by one way of life than another; and he adds, "I see no reason why mercury should not cure the venereal disease under any mode whatever of regimen." He asks, "What effect eating a hearty dinner, or drinking a bottle of wine after it, can have over the action of mercury upon a venereal sore, either to make it affect any part sensibly, as falling on the glands of the mouth, or prevent its effect on the venereal irritation?" In answer thereto, I have only to say, that a use of mercury never fails to render the body irritable; so any thing of a stimulating nature applied to the salivary glands, while under a state of increased susceptibility, and irritability, will be likely to occasion an inflammation and tumefaction in these parts, and thereby pro-

voke a salivation; an event which should ever be avoided when it can possibly be dispensed with.

When we make use of unction for the cure of syphilis, without intending to excite a salivation, we may direct the patient to rub thoroughly into the hams and thighs about half a drachm of the unguentum hydrargyri fortius* every night; and this course he is to continue until a coppery taste is perceived in the mouth, with somewhat of an increase of saliva. As soon as these are perceptible, he must go on gradually, and should they seem to proceed to a greater height than what is intended, instead of using the ointment every night, he ought then to have recourse to it only every other night. On the contrary, should the quantity of ointment here directed be insufficient to produce any apparent effect on the mouth, he must then increase it gradually every night, until he can attain the desired point.

If we employ mercury internally, with the same view of not bringing on a salivation, we may then give one or two of the pilula hydrargyri every night at bedtime: or instead of these, we may recommend some of the other active preparations of mercury, such as the hydrargyri submurias,† the hydrargyri oxydum rubrum,‡ or hydrargyri oxymurias,‖ which may be taken in small doses at first, and so be augmented gradually, as may be found necessary. Along

* By putting six ounces of quicksilver into a proper-sized mortar, with about two ounces of strong mercurial ointment (if rancid the better), and rubbing them briskly together, the globules of quicksilver disappear in a few minutes: and by continuing to rub it well for five or six minutes longer, a union will be so far accomplished that the lard may be gradually added. By this simple process a pound of strong mercurial ointment may be well made in ten or twelve minutes, which according to the usual method requires as many hours. A knowledge of this fact may prove of high utility to apothecaries and druggists.—See No. 7 of the Medical, Surgical, and Pharmaceutical Repository, p. 53.

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† 41. ℞ Hydrarg. Submur.
Camphoræ, āā ℈ij.
Opii, gr. x.
Mel. Optim. q. s. M.
Fiant pilul. xx. quarum j. vel ij. sumat mane et nocte quotidie.

Vel,

42. ℞ Hydrargyr. Submur. ℥j.
Antimon. Tartarizat. gr. v.
Opii Purificat. gr. x.
Mel. Optim. q. s. M.
Fiant pilul. xx. capiat ij. bis in die.

‡ 43. ℞ Hydrargyr. Oxydi Rubr.
Camphoræ, āā ℥j.
Opii, ℈j.
Syr. Simpl. q. s. M.
Fiant pilul. L. quarum sumat æger j. vel ij. omni nocte horâ decubitûs.

‖ 44. ℞ Hydrargyri Oxymuriat. gr. viij.
Solve in mortario vitreo cum

† 41. Take Submuriate of Mercury,
Camphor, of each two scruples.
Opium, ten grains.
Honey, a sufficiency.
Mix them, and out of the mass let twenty pills be formed, of which take from one to two each morning and night.

Or,

42. Take Submuriate of Mercury, one drachm.
Tartarized Antimony, 5 grains.
Opium, ten grains.
Honey, a sufficiency to form the mass. Out of this let twenty pills be made, of which take two twice a day.

‡ 43. Take Red Oxyd of Mercury,
Camphor, of each one drachm.
Opium, a scruple.
Syrup, a sufficiency.
Let the mass be divided into fifty pills, of which the patient may take from one to two every night on going to bed.

‖ 44. Take Oxymuriate of Mercury, eight grains.
Dissolve it in a glass mortar with

with these remedies we may recommend the patient to drink about a quart a day of the decoctum sarsaparillæ compositum, which will tend to carry off the mercury by the skin and kidneys. Where any of its preparations affects the bowels, and excites either a purging or griping, a sufficient quantity of opium should be given at the same time to prevent these consequences.

When, from the urgent nature of the case, we are obliged to employ mercury so as to excite a salivation, we must introduce it into the system in a gradual manner, by beginning with a small quantity, and augmenting it daily, taking care to observe its effects with great attention. If we use unction (to which a preference ought always to be given where we mean to excite a salivation), we may direct the patient to rub in, as has before been advised, about a drachm of it every night previous to his going to bed. If the salivary glands do not become affected after a few days' application of the ointment, he can then increase the quantity each night, until a sufficient flow of saliva is procured.

During the continuance of the spitting, the pulse should never exceed 95 or 100 in a minute; neither should the quantity of the saliva which is discharged be greater than two or three pints in twenty-four hours. Under such a course the body is to be enveloped in flannel, and the patient to drink plentifully of diluent liquors. To alleviate the soreness of his mouth and gums, he may use some soothing gargle* three or four times a day.

From the report of a modern writer† it appears that mercurial frictions are hardly ever employed by the French surgeons in hospitals, although sometimes in private practice they adopt them; and the most common preparation used internally by them in most cases is the oxymuriate of mercury. This is usually given by them either in a simple solution in water and a little spirit, or under the form of Van Swieten's liquor. The usual quantity daily taken by a patient is half a grain, which is administered at a single dose, that the surgeon may see it given. They begin, however, with as much of the solution as contains a sixteenth, or an eighth of a grain, and so increase it. When the constitution indicates the necessity of divided doses, it is given morning and evening, and sometimes in the form of pills.

If we give mercury internally, with the intention of exciting a salivation, we must proceed in the same cautious manner as when under a course of mercurial frictions, increasing or diminishing the dose according to the effect produced.

† See Sketches of the Medical Schools of Paris, by Mr. John Cross.

Spiritûs Vini Gallic. Oj.
ft. Solut. cujus capiat semi-unciam mane et vespere.

* 45. ℞ Decoct. Hord. f. ℥vj.
Mel. Boracis, f. ℥j.
Tinct. Opii, f. ℥j. M.
ft. Gargarisma.

Brandy, one pint.
Of this solution let half an ounce be taken morning and evening.

* 45. Take Decoction of Barley, 6 ounces.
Honey of Borax, one ounce.
Tincture of Opium, one drachm.
Mix them for a gargle.

When a salivation comes on quicker, or proceeds with greater violence than we could wish, notwithstanding all our precautions, we must not only lessen the quantity of mercury, but we must also give one or two gentle purges, and keep the chamber somewhat cooler than before. Sulphur has generally been supposed to possess a power of checking the rapid effects of mercury; and, therefore, where a salivation comes on with great rapidity and violence, we may have recourse to it in doses of from half a drachm to one drachm twice a day, besides taking the steps just mentioned.

In mild cases of syphilis it probably will require from four to six weeks' perseverance in the use of mercury to effect a cure: but in cases of long standing, and a more confirmed nature, it may be necessary to continue it for eight or ten weeks, or even longer. Whether we attempt the cure by salivation, or in the milder way, by giving a tendency to it without proceeding that length, we should always recommend the patient to persevere in the plan even for some short time after the departure of every symptom, in order that he may be ensured in a perfect cure; for the venereal action may to appearance be stopped, and the symptoms vanish, and yet all return again; the virus not having been completely subdued.

As soon as the use of mercury is left off, the diet may be amended, a purge or two exhibited, and a return to the free air be gradually made; after which tonics, with country air and exercise, will greatly tend to recruit the strength.

In the progress of the disease it is often found necessary besides employing mercury in order to counteract or destroy the virus in the system, to attend to particular symptoms; for the removal of which, a topical treatment may likewise be requisite. The tonsils, uvula, and other parts of the fauces, as likewise the nose, are frequently discovered in a state of ulceration, where the disease has been of long standing. In such cases, the parts should be well cleansed by washing them twice or thrice a day with some proper gargle;* after which, the fumes arising from myrrh and the hydrargyri sulphuretum rubrum thrown upon hot iron may be brought into contact with them by means of an inverted funnel.

When eruptions ulcerate, washing them with submuriate of mercury and water, or the hydrargyri oxymurias and liquor calcis, and dressing them with mild mercurial ointment, will be most

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* 46. ℞ Hydrarg. Oxymuriat. gr. v.

Solve in mortario vitreo cum
Spirit. Rectif. f. ℥ss. et adde

Decoct. Cinchon. f. ℥vj.
Tinct. Myrrh. f. ℥j.
Mel. Rosæ, f. ℥ss. M.
ft. Gargarisma.

* 46. Take Oxymuriate of Mercury, five grains
Dissolve it in a glass mortar with
Rectified Spirit, half an ounce,
and add
Decoction of Bark, six ounces.
Tincture of Myrrh, one ounce.
Honey of Roses, half an ounce.
Mix them for a gargle.

proper; making use, at the same time, of the compound decoction of sarsaparilla, as advised in those cases where nodes arise.

Venereal pains, blotches, and scaly eruptions will be removed most readily by employing sudorifics at the same time with mercury. About a quart of the decoctum sarsaparillæ compositum, or of the Lisbon diet-drink,* the qualities of which have been the subject of so much encomium, may therefore be drunk daily with this view. In preparing this last, the powdered antimony and pumice-stone are to be tied in separate pieces of rag, and boiled along with the other ingredients. It is probable that the operation of these medicines, where the patient is not under a salivation, may be assisted by going into a warm bath now and then; but in having recourse to this remedy, the patient must observe the greatest precaution not to take cold, by wrapping himself up in very warm clothing on his coming out of the bath.

If the pains are so severe as to interrupt his rest by night, he should take an opiate† on going to bed.

Nodes on the bones are to be relieved by rubbing them every night with a small quantity of mercurial ointment, or by wearing a plaster of the same nature over them, assisted by a compound decoction of sarsaparilla, or mezereon;‡ together with opiates, where the pain is great.

In inveterate cases, where the surface of the bone becomes carious, it will be found necessary either to make an incision through the integuments and periosteum the whole length of the diseased part, or to apply a caustic to it for the purpose of procuring an exfoliation; but this last will require great caution and skill, and in applying it some expertness will be requisite, to

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* 47. ℞ Sarsaparillæ, concis.
Rad. Chinæ, ää ℥j.
Nucum Juglandis cortic. siccatarum xx.
Antimonii, ℥ij.
Lapid. Pumicis Pulv. ℥j.

Aq. Distillat. Ox.
Coque ad dimidium et cola.

† 48. ℞ Liquor. Ammon. Acetat. f. ℥ss.

Aquæ Menth. Virid. f. ℥j.
Vini Antimon. Tart. ♏ xvj.

Tinct. Opii, ♏ xx.
Syr. Papaveris, f. ℥j. M.
ft. Haustus.

‡ 49. ℞ Rad. Mezerei, contus. ℥ij.

—— Glycyrrhizæ, ℥j.
Aq. Distillat. Oij.
Coque ad dimidium, et col. bibat Oss. ad Oj. in die.

* 47. Take Sarsaparilla, sliced,
China Root, of each one ounce.
Dry Rind of twenty Walnuts.

Antimony, two ounces.
Powder of Pumice Stone, one ounce.
Distilled Water, ten pints.
Boil it slowly until the liquor is reduced one half, then strain it.

† 48. Take Solution of Acetate of Ammonia, half an ounce.
Mint Water, one ounce.
Wine of Tartarized Antimony, twenty-four drops.
Tincture of Opium, thirty drops.
Syrup of Poppies, one drachm.
Mix them for a draught.

‡ 49. Take Mezereon Root, bruised, two drachms.
Liquorice Root, one ounce.
Distilled Water, two pints.
Boil them until the liquor is reduced to a half, and then strain it off. From half a pint to a pint may be drunk daily.

prevent it from spreading to a greater extent than what is intended, or may really be necessary.

Acetic acid will remove corns in one or two applications with the greatest certainty, and, if not carefully managed, the surrounding cuticle also which it happens to touch. To large verrucæ or warts with broad bases, the same application will be effectual. Those that are pendulous with a narrow neck may be removed with scissors; and after the oozing of blood has ceased, they may be touched with the sulphate of copper, or a solution of lunar caustic.—See Gonorrhœa.

Inflammation of the iris, although frequently met with in syphilis where mercury has not been exhibited so as to affect the system, still its occurrence is more frequent as consequent upon the use of it than arising as an idiopathic disease. Under these circumstances it is not surprising that some surgeons of reputation should be disposed to deny that the inflammation of the iris is a venereal inflammation, and should consider it as belonging to that class of symptoms which resemble or are grafted upon the syphilitic, and that others should regard it as an inflammation produced by the poison of mercury.*

In the early and active stage of acute inflammation of the eyes, and previous to any mercurial action being induced, it will always be advisable to have recourse to blood-letting, both from the arm, and topically by the application of several leeches to the temples. It will likewise be necessary to give one or two doses of some cooling purgative. Besides these means, the eyes may be bathed two or three times a day with some cooling collyrium, as advised under the head of Ophthalmia, and the irritation of light be avoided, either by confining the patient to a dark room, or obliging him to wear a large green shade over his eyes. Should the pain and inflammation not abate in due time by this mode of treatment, the application of a small blister behind each ear, or of a large one to the nape of the neck, will be proper. When the inflammation is reduced, we may begin with a use of mercury.

Where syphilis falls on the bones of the nose, besides making use of mercury with the decoctum sarsaparillæ compos., or the Lisbon diet-drink, we should employ detergent lotions,† which may be applied to the parts by means of a syringe. When combined with ulcerations of the tonsils, palate, or uvula, we must

* See Surgical Essays by Sir Astley Cooper and Mr. Travers, vol. i. p. 60.

† 50. ℞ Hydrarg. Oxymuriat. gr. iij. Solve in mortario vitreo cum
Spirit. Rectificat. ℥ss. et adde
Decoct. Cinchon. f. ℥vj.
Tinct. Myrrh. f. ℥ij.
Mel. Rosæ, f. ℥ss. M.
ft. Lotio.

† 50. Dissolve Oxymuriate of Mercury, three grains in a glass mortar, with
Rectified Spirit, half an ounce, and add
Decoction of Peruvian Bark, six ounces.
Tincture of Myrrh, two drachms,
Honey of Roses, half an ounce,
Mix them for a lotion.

likewise make use of fumigations and gargles, as before recommended.

In those cases where ulcers of a phagedenic nature present themselves, we must omit the use of mercury for a time, and have recourse to the cinchona bark, with wine and a nutritive diet, removing the patient at the same time into a pure air, if his situation is any way close or confined. Occurrences of this nature happen more frequently in hospitals than in private practice, and are owing, in a great measure, to the vitiated air which prevails in the wards set apart for venereal patients, as has already been mentioned.

In several cases of phagedenic ulceration, which had resisted the usual means employed by surgeons, the application of lint, moistened in the balsam of Peru, has been attended with happy effects, occasioning in a few days the sphacelous parts to slough off, the face of the sore to become clean, and healthy granulations to extend over its surface.

In broken constitutions, where œdematous swellings of the legs have begun to manifest themselves, a perseverance in a mercurial course ought not to be pursued. In such distressing cases, a generous diet, country air, and regulated exercise, are the best remedies, entirely omitting the use of mercury till the constitution is renovated. Where dropsy has actually taken place, nitric acid, given in as large doses as the stomach and bowels can bear, conjoined with digitalis or squill, may be of great service.

Other remedies have been recommended as possessing specific effects in syphilis besides mercury. These are the oxygenated muriate of potass and the different mineral acids, but more particularly the nitric, which has been noticed in pointing out the proper treatment of chancres. It remains further to observe, that from the trials I have made of it, it appears to be well calculated to remove many of the primary symptoms of this disease, and may therefore be used in all such cases with safety, and most likely with the assurance of much advantage; but in a confirmed syphilis it ought never to be solely relied on. Its inefficacy in all such cases has been fully substantiated, not only by Mr. Blair,* but by various other practitioners of eminence. Many allow it, however, to possess a palliative power, and almost all admit its salutary effects in remedying the disordered state of the system arising from the excessive use of mercury.

The lobelia, or blue cardinal, is another new remedy which of late has been recommended for the cure of syphilis; but its effects are by no means sufficiently established to place any great dependence upon it. It is given in the form of decoction,‡ the

* See his Essay on the Venereal Disease part iii.

‡ 51. ℞ Rad. Lobeliæ Syphilitic. Siccæ, manip. j.
Aq. Distillat. Oxij. Coque ad Oviij.

† 51. Take Dry Roots of Blue Cardinal, one handful.
Distilled Water, twelve pints.
Boil down the liquor to eight pints.

patient beginning with half a pint twice a day. After some little time the same quantity is to be taken four times a day, and to be continued so long as its purgative effect is not too considerable. When the case is otherwise, it is to be discontinued for three or four days, and then to be had recourse to again till the cure is completed.

The effects of this decoction are evidently purgative, as will be observed from what has just been mentioned.

Another new remedy is the decoctum astragali,* which has been very extensively used in Germany, and is said to possess powerful effects as an antisyphilitic. For a more particular account of its virtues, I must beg leave to refer the reader to the London Medical Journal.

The decoctum dulcamaræ† is likewise another new remedy which is highly spoken of in anomalous diseases originating in lues venerea. The dose is half a pint in twenty four-hours, mixed with an equal quantity of milk.

The treatment of syphilis in infants is pointed out among the other diseases to which they are liable.

SIBBENS.

Sibbens, or Sivvens, is a disease which was first noticed by Dr. Gilchrist; and we are told by him that it was then confined to the west of Scotland. He supposes that its spreading is chiefly owing to a neglect of cleanliness; but from the report of others we are informed that it is commonly got by drinking from the same cup, smoking tobacco from the same pipe, sleeping in the same bed, or handling the sores of such as labour under it.

The first appearances of the disease are usually to be observed in superficial ulcerations on the tonsils and uvula, together with an aphthous eruption in the inside of the mouth, cheeks, and lips. Sometimes a hoarseness attends this state of the parts, and excrescences similar to a raspberry arise from them. From these the name of sibbens is derived.

Soon after the affection of the mouth has taken place, small pustules are to be discovered on the skin, which break after a time, and leave behind them dry livid crusts, beneath which ulcers form

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* 52. ℞ Rad. Astragal. Excapi, ℥j.
Aq. Fontan. Oiij. Coq. ad. Oij. Bibat. in die.

† 53. ℞ Stipitum Dulcam. Recent. ℥ij.
Aq. Fontan. Oiv. Coq. ad Oij. et col.

* 52. Take Stemless Milk Vetch Roots, one ounce.
Pure Water, three pints.
Boil the liquor to two pints, and let this quantity be drank daily.

† 53. Take Fresh Bittersweet, two ounces.
Pure Water, four pints.
Boil it down to two pints, and strain off the liquor.

that bear some resemblance to a chancre, as they spread more in depth than in breadth.

Instead of ulcerations, collections of matter in the form of boils or critical abscesses sometimes appear on different parts, which degenerate into sores of a superficial kind, discharging a thin acrid secretion. These are soon filled up with fungous excrescences which shoot up in the form of a raspberry, like those of the mouth and throat.

It is seldom that the bones become affected in consequence of the sibbens; but in those cases the grisly parts of the nose have suffered by erosion.

By the natives the disease has been supposed to have some connexion with the itch; by others it has been thought to bear a great affinity to syphilis; but undoubtedly it has a greater resemblance to the yaws than to any other disease whatever, and possibly might have been introduced into the west of Scotland by some persons from the coast of Africa or the West Indies, where the yaws is a very prevalent disorder, being, however, chiefly confined to negroes, mulattoes, and others of a mixed race; but white people are sometimes attacked by it.

I am indeed firmly of opinion that sibbens is not a distinct disease from the yaws, but merely a variety; and that the trifling dissimilitude which may be observed between them is wholly to be attributed to the difference of climate, mode of living, diet, colour of the skin, &c. A friendly communication from the late Dr. Collingwood, of Sunderland, has strongly corroborated this opinion. He informs me, that about the year 1769, a West Indian vessel was wrecked on the coast of Wigton, in Cumberland, some of the crew of which were saved, and hospitably received into the houses of those who resided near the spot, and that very soon afterwards the disease in question was communicated to the inhabitants, and became frequent. Dr. Collingwood being then a resident at Wigton, was called upon for advice, and he treated every case as had been recommended in the yaws by men of experience, and with the greatest success. I am further informed by Dr. Collingwood, that a few years ago he made a tour of the south-west of Scotland for near 150 miles, and that he repeatedly inquired for the sibbens among the practitioners, the younger of whom had never seen such a disease, while those of more advanced years assured him that it had wholly disappeared.

Dr. Adams, in his Observations on Morbid Poisons, informs us, that the sivvens is to be distinguished from lues, by the venereal ulcer being attended with a callous edge and base; whereas that of sivvens consists only of the clean phagedenic ulcer. Moreover, the former retains much longer its copper appearance, and afterwards becomes elevated, having more the colour of the skin, and the scab, when formed, more scaly. In sivvens the appearance is very rarely pustular: and he never could detect pus under the

cuticle; he therefore conceives that pus is still less in quantity than in syphilis. He adds, it is universally admitted that sivvens never attacks the bones but by spreading from the soft parts, and that it yields earlier to mercury than syphilis.

Sibbens is to be cured exactly in the same manner as the yaws, both as to its topical and constitutional treatment. During the first stage of sibbens we ought to employ diaphoretics, with warm bathing, to determine the noxious matter to the surface of the body; but in the second stage, where the eruptions begin to dry off, it will be necessary to put the patient under a gentle course of mercury, with the occasional aid of some mild purgative.

FRAMBŒSIA, OR THE YAWS.

THIS is a very common disease among the negroes in our sugar-colonies, and imported, no doubt, originally from Africa. It never spreads by miasma floating in the air, but may be quickly propagated by cohabiting or otherwise coming in frequent contact with such as are affected by it: hence, although white people do not seem so susceptible of its influence as those of colour, they nevertheless sometimes become tainted.

It may likewise be communicated by the application of matter from a yaw pustule or sore to a wound in a person who has not before had the disease; and it is no uncommon occurrence for negroes to inoculate themselves with the view of obtaining a long exemption from labour. It is one of those complaints which affect the same person but once in his lifetime.

The yaws are sometimes preceded by pains in the limbs which somewhat resemble those of rheumatism, and are particulary severe round the joints; these pains are attended with langour and debility, and frequently continue for many days without any further appearance of disease. After a time these precursory symptoms are succeeded by a degree of pyrexia, sometimes attended with rigors, although in other instances the fever is slight and scarcely noticed.

For the most part the patient complains of headach, loss of appetite, and pains in the back and loins, which are rather exacerbated towards evening. When these symptoms have continued for a few days, they are followed by an eruption of pustules more or less numerous, which appear in various parts of the body, but especially upon the forehead, face, neck, arm-pits, groins, pudenda, and round the anus. The eruption of these pustules is not completed over the whole body at one time, neither do they show themselves in any regular succession on the different parts; but while one crop is falling off, a fresh one is making its appearance in another place. Every new eruption of pustules is usually preceded by a slight febrile paroxysm. On the first appearance of the pustules or pimples, they are not larger than a pin's head, but

gradually increase until they attain the size of a sixpence, or even of a shilling. The pustules are filled with an opaque whitish fluid, and when they burst a thick viscid matter is discharged, which forms a foul and dense crust or scab upon the surface. From the larger kind of pustules there frequently arise red fungous excrescences of various magnitudes, from the size of a pea to that of a large mulberry: which fruit, owing to their rough granulated surfaces, they somewhat resemble. These fungi, though they rise considerably above the surface of the skin, have but a small degree of sensibility; they never suppurate kindly, but discharge a sordid glutinous fluid, which forms an ugly scab round the edges of the excrescence, and covers the upper part of it, when much elevated, with a white slough. When these eruptions appear upon any part of the body covered with hair, the colour of the latter is gradually changed from black to white. In general the number and size of the pustules are proportioned to the degree of eruptive fever. When the febrile symptoms are slight, there are few pustules; but they are mostly of a larger size than when the complaint is more violent and extensive.

The duration of the yaws is very uncertain, but is generally supposed to depend a good deal on the habit of body at the time of receiving the infection.

In some cases they arrive at their full size and maturity in the space of four or five weeks; but in others they have taken two or three months.

When no more pustules are thrown out, and when those already upon the skin no longer increase in size, the disease is supposed to have reached its height. About this time it happens on some part of the body or other, that one of the pustules becomes much larger than the rest, equalling the size of a half-crown piece; it assumes the appearance of an ulcer, and instead of being elevated above the skin like the others, it is somewhat depressed; the surface is foul and sloughy, and pours out an ill-conditioned ichor, which spreads very much by corroding the surrounding sound skin: this is what is called the master or mother yaw. If proper attention be not paid to keep the surface of the ulcer clean, the matter becomes very acrid, and when near a bone sometimes affects it with caries.

When the excrescences appear upon the soles of the feet they are prevented from rising by the resistance of the thick hard epidermis, and give so much pain that the person affected is unable to walk. The fungi thus situated are called by the negroes in the West Indies, tubba, or crab yaws. They are sometimes so large as to cover a great part of the sole of the foot; at other times they are not larger than a shilling; like corns, they are frequently affected by different states of the atmosphere, but more particularly by rainy weather.

Where a judicious mode of treatment has been adopted, the yaws, although a very loathsome complaint, seldom proves either

difficult or tedious of cure, and even in the worst of cases is never attended with immediate danger; but where the eruptions have been repelled into the system by external applications, or too early a use of mercury has been resorted to, the cure is often greatly protracted, and in some cases rendered uncertain. Where the disease has been suffered to pursue its course without any assistance, foul ulcers of a considerable extent are apt to be formed, which induce great debility, and often occasion a caries of the bones.

Having clearly ascertained the disorder to be the yaws, the negro ought to be sent immediately to some very private part of the estate, where he can have no possible communication with such as never had it. This precaution is by no means sufficiently attended to, as those who labour under the disease are too frequently suffered to associate and mix in friendly intercourse with other negroes, by which means it is propagated from one to another instead of being eradicated.

During the eruptive stage of the disease we are to assist the efforts of nature in determining the noxious matter to the surface of the body by giving some mild diaphoretic,* which may be washed down with about half a pint of the decoct. sarsaparillæ compositum. With these remedies the patient should make use of a warm bath about twice a week, confining himself at the same time to a vegetable diet. He ought to be comfortably and warmly lodged, and his system be invigorated by taking daily exercise proportioned to his strength.

In the second stage of the disease where the eruptions begin to dry off, it will be advisable to employ mercury so as to produce an alterative effect. A weak solution of the hydrargyri oxymurias† is the medicine which I have found to answer best on this occasion;

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* 1. ℞ Pulv. Contrajerv. gr. x.
Camphoræ, gr. iij.
Sulph. Loti, gr. xv.—℥ss.
Syr. Simpl. q. s. M.
ft. Bolus, mane et nocte sumendus.
Vel,
2. ℞ Pulv. Gum. Guaiac. ℈ss.
——Antimonial. gr. ij.
Sulphur. Loti, gr. xx.—℥ss. M.
ft. Pulvis, mane nocteque capiendus.

† 3. ℞ Hydrargyr. Oxymuriat. gr. iij.
Solve in Spirit. Tenuior. f. ℥vi. M.
Sumat semiunciam mane et vespere.
Vel,
4. ℞ Hydrargyr. Oxymuriat. gr. xx.
Solv. in Spirit. Vin. Gal. f. ℥j. et. adde

* 1. Take Powder of Contrajerva, ten grains.
Camphor, three grains.
Washed Sulphur, from fifteen grains to half a drachm.
Syrup, a sufficiency.
This bolus is to be taken morning and night.
Or,
2. Take Gum Guaiacum in powder, ten grains.
Antimonial Powder, two grains.
Washed Sulphur, from fifteen grains to half a drachm.
Mix them, and let this powder be taken morning and night.

† 3. Dissolve Oxymuriate of Mercury, three grains, in
Proof Spirit, six ounces.
Take half an ounce morning and evening.
Or,
4. Take Oxymuriate of Mercury, twenty grains.
Dissolve it in
Brandy, one ounce.
And add

and in order to disguise its nauseous taste it may be given in a little milk. The decoctum sarsaparillæ compos. may be used at the same time. Both are to be continued until the scabs become perfectly dry and fall off; at which period they are to be omitted, and then a few doses of any aperient salt, or other gentle purgative, should be given. If the mouth becomes much affected by the mercury, its use must either be discontinued for a time, or the dose be lessened.

It has already been observed, that there usually remains one large eruption after all the rest have died away; and this, by degenerating into a foul ulcer, discharges an ichorous matter. The best application for its cure is the unguentum hydrargyri nitrico-oxydi. An ointment composed of the subcarbonate of iron with citric acid and prepared lard is much employed in the West India islands, and with great efficacy.

From the thickness of the cuticle in the feet, when the yaws appear there, the discharge is apt to be confined. When they break they are difficult to heal, often ulcerating the whole sole, and thereby rendering the person incapable of walking. A poultice of the fresh cassava-root, which is of the narcotic tribe, and well known in every West India island, is the best application in such cases.

Hard swellings of a very painful nature which do not suppurate, sometimes appear likewise in the soles of the feet as a consequence of the yaws, and occasion lameness. To remove them the patient should bathe his feet in warm water until the swellings become somewhat soft; they then should be seared with a hot iron, which produces an eschar and sore that is readily healed by dressing it with some gentle escharotic.

Inoculation has been proposed for this disease, and probably it might be rendered thereby more mild in its symptoms, and quicker in its progress; but as many negroes pass through life without the yaws, and they never prove fatal when judiciously treated, it is not likely that the owners of West India estates will be ready to submit to the unnecessary loss of labour which would be incurred by having recourse to the operation, the disease requiring in some cases many months to go through its regular course.

ELEPHANTIASIS.

Elephantiasis appears to belong to the class of lymphatic diseases: it attacks the skin and adipose membrane of the lower extremities, and gives to the limbs a bulk so monstrous and a form

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Vini Antimon. Tart. Tinct. Opii, āā ℥ss. M.	Wine of Tartarized Antimony. Tincture of Opium, of each half an ounce. Mix them, and take from twenty to thirty drops morning and night, daily.
Capiat ♏ xij.—xx. mane et nocte, quotidie.	

so hideous, that they have been compared to the feet of an elephant, from which appearance the name has been taken. The disease in general is, however, confined to one leg.

Elephantiasis has generally been supposed to arise in consequence of some slight attack of fever, on the cessation of which the matter falls on the leg, and occasions a distention and tumefaction of the limb, which is afterwards overspread with uneven lumps and deep fissures. Some authors, in treating on this disease, confound and blend it with lepra, in which the constitution is generally affected, the whole of the skin becoming thick, rough, and scaly, and assuming a yellow colour, the hair falling off, small elevations arising in different parts of the body, particularly on the face, which in time degenerate into wide-spreading ulcers, that discharge a fetid corrosive matter, and have a dusky red margin, occasioning extreme debility, and inducing hectic fever; but from having met with many cases during my residence in the West Indies, where elephantiasis was confined entirely to the lower extremities, and unaccompanied by any of the symptoms just detailed, and being moreover a non-contagious disease, the direct contrary being the case with leprosy, I have given it a distinct consideration.

It sometimes comes on gradually without much previous indisposition; but more generally the person is seized with a coldness and shivering, pains in the head, back, and loins, and some degree of nausea. A slight fever then ensues, and a severe pain is felt in one of the inguinal glands, which after a short time becomes hard, swelled, and inflamed. No suppuration however ensues, but a red streak may be observed running down the thigh from the swelled gland to the leg, and along the course of the lymphatics. As the inflammation increases in the parts, the fever generally abates, and perhaps after two or three days' continuance goes off. It however returns again at uncertain periods, leaving the leg at last very hard, difficult of motion, and greatly swelled with varicose turgid veins, the skin rough and rugged, and a thickened membrana cellulosa. Scales appear also on the surface, which do not fall off, but are enlarged by the increasing thickness of the membranes; uneven lumps, with deep fissures, are formed, and the leg and foot become at length of an enormous size and hideous appearance.

A person may labour under this disease many years without finding much alteration in the general health, except during the continuance of the attacks; and perhaps the chief inconvenience he will experience is the enormous bulky leg which he drags about with him. The encumbrance has indeed induced many who have laboured under the disease to submit to an amputation; but the operation seldom proves a radical cure, as the other leg frequently becomes affected.

Dr. Hillary observes,* that he never saw both legs swelled at

* See his Treatise on the Diseases of Barbadoes.

the same time. Instances where they have alike acquired a frightful and prodigious size, have however frequently fallen under my observation, as well as that of other physicians.

From the report of a modern writer,* it appears that the inhabitants of Cochin, on the coast of Malabar, are very much afflicted with an enlargement and swelling of one leg, somewhat similar to elephantiasis; and as the disease is not to be met with in other parts of India, it has the appellation of the Cochin leg. The swelling is always confined to one leg, and reaches from the ankle to the knee: the dimensions of the leg in every part being so large as to equal, if not exceed, the thigh of the same person; but no inconvenience or pain is felt in walking.

A particular species of elephantiasis is said by Dr. Hendy† to be endemial in the island of Barbadoes. It has been denominated the glandular disease: he tells us, that it is not incident to the inhabitants of the other West India islands, and that a person who has suffered from it in Barbadoes may have fresh attacks of it if he remains there; but that by removing to any other place, he may be certain of preserving himself from any return of the disease. In this assertion Dr. Hendy is certainly mistaken, for I have met with it in both of the islands of St. Christopher and Nevis, and so also have other physicians.‡ Moreover, a gentleman from the former of these islands, who came to Europe for the recovery of his health, in consequence of both his legs being affected with this species of glandular disease, not long ago applied to me for advice; and although he had been in England nearly two years, and had consulted several of the faculty, still both limbs were very much enlarged, and but very little diminution of size had taken place.

By Dr. Hendy we are informed that the disease is truly characterized by the appearances it produces on the lymphatic system. These are, almost universally, a certain cord, which is hard or red (often both,) extending in the ordinary direction of the lymphatic vessels towards the lymphatic gland. The part affected swells and puts on a shining and œdematous appearance; it does not, however, often pit to the touch, though strongly pressed with the finger, except only when the disease is recent; the effect of pressure is then the same as in cases of anasarca. The joint nearest to the affection becomes stiff and contracted in consequence of the neighbouring inflammation and swelling.

When the concomitant fever abates after a duration, which varies in different patients, it leaves the local swelling and inflammation, which continue for a few days afterwards. The swelling, indeed, seldom entirely subsides, particularly when the lower extremities are affected. There are some instances, however, in

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* See Parson's Travels in Asia and Africa, p. 228.

† See his Treatise on the Glandular Disease of Barbadoes.

‡ See Medico-Chirurgical Transactions, vol. vi. p. 73.

which these enlargements have totally disappeared, but they are rare.

The lymphatic gland has in several instances been left enlarged and indurated. Sometimes the inflammation in the gland proceeds to suppuration. The inflammation that takes place in the lymphatic vessels is of the erysipelatous kind, and sometimes terminates in mortification. At other times, however, it resembles rheumatism, and in several instances abscesses have been formed in the cellular substance. Ulcers which are difficult to cure are in some cases the consequence of these abscesses.

Dr. Hendy conceives, that the lymphatic vessels being inflamed and obstructed, will be incapable of absorbing and transmitting the lymph deposited in the cellular membrane by the exhalant arteries; that an undue accumulation of this fluid in consequence taking place, the skin will be distended; that the great distension will crack the skin and suffer the lymph to ooze through the fissures, and that this fluid drying, occasions the scaly scabby appearances exhibited in those cases. He illustrates his opinion by an appeal to the late Mr. Hewson's experiments, by which we are taught that the lymph deposited in the cavities and vessels of an healthy animal will always jelly on being exposed to the air.

The parts most apt to be affected with this disease are the inferior extremities; but the penis and scrotum are also very frequently the seat of it, and the latter in some cases becomes of an uncommon magnitude. In the sixth volume of the Medico-Chirurgical Transactions, p. 73, a case is recorded in which the tumour measured longitudinally, from the symphisis pubis to its base, 29 inches, circularly 43. It was removed by an operation, and weighed 70 pounds. The patient recovered and lived many years afterwards. Upon examining the tumour, the testicles were found to occupy their natural position; the left one was about the size of a hen's egg; the tunica vaginalis of the right side contained three pints of water, but the testicle was considerably diminished. The right side of the scrotum being opened, the integuments at the upper part were about two inches in thickness; nearer the base they increased to four inches and a half; a fluid oozed from its substance, and the cavity was filled with gelatinous matter and a fluid; on cooling, the latter became gelatinous also.

The occasional cause of the disease is referred by Dr. Hendy chiefly to cold; and he considers the peculiar dryness of the atmosphere of Barbadoes, arising from its being cleared of woods, with which the other West India islands abound, as the circumstance which renders the people of Barbadoes particularly liable to this complaint. What the real cause may be I will not pretend to determine, but I think it may be owing more likely to some peculiarity in the waters of that island. The inhabitants of certain districts abounding with saline and mineral springs are more frequently afflicted, we well know, with diseases of the glands in the

neck, such as the goitre and Derbyshire neck, than persons residing in other situations.

Although there is some little difference in the appearance of the two affections here described, the Barbadoes disease strongly resembling the chronic stage of phlegmasia dolens (see this affection,) still both require a similar treatment at their onset.

Notwithstanding that the fever which precedes the inflammatory affection of the groin sometimes runs high, still it seldom will be necessary, in elephantiasis, to have recourse to the lancet in order to moderate it. Should any great degree of nausea prevail, it may be advisable to give an emetic; and after its operation, if the body should be costive, some gentle purgative may be administered.

To promote a moderate perspiration, the diaphoretics advised under the head of Simple Fever may be prescribed; to assist the effect of which, the patient should drink plentifully of warm diluting liquors. The parts affected are to be well fomented with cloths dipped in a warm infusion of emollient herbs, and afterwards be wrapped up in flannel. At the commencement warm bathing might possibly be of use.

When the fever goes off, the cinchona may be given with advantage; and it is probable that an issue put into the thigh might be serviceable.

If suitable means have been neglected on the first attack of the disease, and the leg has become much enlarged, with a scaly and irregular surface, no cure can be expected. It is probable, however, that gentle alteratives,* with warm bathing, might somewhat retard its progress. The decoct. sarsaparillæ compos. mezerei, or lobeliæ syphiliticæ (see Lues and Leprosy,) might also be used with advantage, changing the one for the other as the circumstances of the case may seem to require.

A case of elephantiasis, reported by Mr. Ward of Manchester, in the 9th vol. of the Medical and Physical Journal, p. 545, induces me to recommend a trial to be made of the effect of pressure. The best mode of applying it is that advised by Mr. Baynton, in the cure of ulcers, and which is fully detailed in the treatment of these complaints; but previous to the application of the strips of adhesive plaster and bandage, it will be advisable to wash the

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* 1. ℞ Antimon. Sulphureti Præcipit ℈ij.
Hydrargyr. Submuriat. ℈j.
Pulv. Gum. Guaiac. ʒj.
Syrup. Simpl. q. s. M.
Fiant pilulæ xxx. Capiat. j. vel ij. mane et nocte, quotidie, cum Decoct. Sarsaparil. Compos. Oss.

* 1. Take Precipitated Sulphur of Antimony, two scruples.
Submuriate of Mercury, one scruple.
Powdered Gum Guaiacum, one drachm.
Syrup, a sufficiency to form the mass, out of which let thirty pills be made. One or two of these may be taken night and morning, with half a pint of the Compound Decoction of Sarsaparilla.

tumid parts very well with tepid water and soap, at least two or three times a week.

It appears from some late accounts that the Hindoo physicians use arsenic internally in the treatment of elephantiasis. They make it into pills with pepper in the following manner :—

Take of white arsenic, fine and fresh, one part ; of picked black pepper, six parts.

Let both be very well beaten together for a considerable time in an iron mortar, and then reduced into an impalpable powder in one of stone, with a stone pestle ; and thus completely levigated, a little water being mixed with them, make pills of them as large as tares or small pulse, and keep them dry in a shady place.

They direct one of these pills to be taken morning and evening with some betel-leaf, or in countries where this is not to be had, with cold water. If the body be cleansed from foulness and obstructions by gentle cathartics and bleeding before the medicine is administered, the remedy, we are told, will act more speedily.

When an amputation of the diseased limb is submitted to, in consequence of the great encumbrance, a proper discharge should, for very obvious reasons, be promoted from the other leg by means of an issue, or from the end of the stump itself, provided the amputation has been made below the knee.

LEPRA, OR LEPROSY.

LEPROSY consists in an eruption of copper-coloured spots dispersed over various parts of the body, with some degree of insensibility in them, together with a glossy and scaly appearance of the skin, thickening of the lobes of the ears, falling off of the hair, hoarseness of the voice, offensiveness of the breath, and ulcerations in various parts.

Monsieur Sonnini informs us,* that the leprosy, whatever may be its nature, is not in Egypt considered as a contagious disease, and that lepers are not there, as in Turkey, secluded from society. The Egyptians take no precautions to preserve themselves from infection, nor do they consider that this indifference is atte ded with the smallest danger. In so doing, I must say, they lie under a great error, for the disease is very readily propagated from one person to another by contact or cohabitation, as I have often witnessed during my residence in the West Indies.

He further mentions, that from a variety of observations, it appears that persons afflicted with the leprosy have ardent dispositions towards the physical instances of love ; and he quotes an instance of a leper, who on the very night of his death was several times hurried away by the warmth of his temperament. He tells

* See his Travels through Egypt, p. 559.

us, he has noticed at Canea, in the island of Candia, great numbers of lepers, both men and women, banished without the gates of the city, in miserable hovels, where they abandoned themselves to the greatest excesses of voluptuous irritation. They were sometimes to be seen satisfying their disgusting and impetuous lust in open day, by the side of the roads leading to the town near which they lived; but, he observes, it is only those who are troubled with that species of leprosy which is confined to the joints that have this disposition to venery. Those afflicted with the other species of leprosy which Hillary has distinguished in his Treatise on the Diseases of Barbadoes, under the title of Leprosy of the Arabs, have no such propensity. The sufferings these undergo deprive them at once of every kind of desire, as well as of the means of gratification, supposing they even possessed the power.

Dr. Adams also observes, in his Treatise on Morbid Poisons, that in many cases of this affection the genitals diminish, the testicles waste away and are absorbed, and all sexual appetite is lost. The same circumstances are noticed by Dr. Gourlay in his History of Madeira.

The disease arises sometimes from an hereditary taint or predisposition, being in that case entailed from one generation to another; but it more commonly proceeds from infection, communicated either by cohabiting, or otherwise coming in contact with those who labour under it in a high degree. That a predisposition to the leprosy is often derived from the parents, I have had the most convincing proofs, having seen it affect many persons of one family, although they have been kept apart from each other.

The leprosy shows itself in numerous copper-coloured spots dispersed over the whole body, which are attended with a degree of insensibility, and these keep increasing gradually both in size and number, perhaps, for some months, without occasioning any great alteration in the general state of health. As the disease advances, however, the skin begins to grow rough and scaly; the features of the face become greatly enlarged, especially above the eyebrows, the hairs of which and the beard fall off; the alæ of the nose swell and become scabby; the nostrils ulcerate; the voice is hoarse, and the pronunciation nasal; the lobes of the ears are greatly thickened, and affected with tubercles and dry scabs; and sometimes ulcers are produced upon the fingers and toes, which at last separate joint after joint; the breath is highly offensive; fetid, virulent sores arise in various parts of the body, which becomes at length a putrid mass; it wastes daily, and nature at last sinks under the weight of misery.

This is the form under which the leprosy is usually met with in warm climates among negroes, a race of people seemingly more liable to its attacks than whites; but in cold climates it always appears under a much milder form, and is never attended with the violent symptoms just enumerated, seeming to be merely a local disease of the cutis, its vessels, and glands.

Although by paying a proper attention to regimen, and administering alteratives, we may be able somewhat to retard the progress of the disease, and thereby prolong the life of the patient, still when the habit becomes generally tainted, all means will be likely to prove inefficacious. When it arrives at the stage of ulceration, it is highly infectious by contact.

In dissecting the bodies of those who have died of leprosy, all the organs have been discovered in a state of putrescency except the heart.

If any relief is to be afforded in this disease, it is chiefly to be obtained by the regular and rigid observance of a vegetable diet, commenced on the first appearance of its approach. As soon, therefore, as any symptom of it is observed, the patient should be debarred from fish, butter, and all sorts of animal food whatever, substituting fruits and vegetables of various kinds; and this course ought to be persisted in for the remainder of his life. At the same time that he gives up the use of animal food, he ought also to avoid all heating liquors, such as wine and spirits. Besides paying much attention to diet, he is likewise to take a due proportion of moderate exercise, and to keep his body regularly open by efficient laxatives.

Small doses of mercury joined with antimony have been given at an early period of the disease, but I cannot say I ever saw any good effect derived from their use. A solution of hydrargyri oxymurias and Plumber's pill,* to which the pilula hydrargyri submuriatis composita of the London Pharmacopœia is similar, are the preparations most in repute, and with these the patient may drink about a pint a day of the decoctum sarsaparillæ compositum. A decoction of elm-bark taken in the same quantity daily, has proved highly serviceable in some cases of incipient leprosy. A beer made from the essence of spruce fermented with molasses or syrup, and used for ordinary drink, has likewise proved beneficial in some instances.

Strange remedies, such as viper and lizard broths have been recommended in the cure of leprosy; but on all the trials which I have known made with them during my practice in the West Indies, they proved wholly inefficacious.

Arsenic has lately been proposed as a remedy, which we are given to understand is much used in Asia in this disorder. The arseniate solution or liquor, as mentioned under the head of Intermittents, in the dose of about six drops three times a day, increased

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* ℞ Hydrargyr. Submuriat.
Antimon. Sulphuret. Præcip. āā ℥ss.
Guaiac. Gumm. Resin. ℥ij.
Syrup. Simpl. q. s. M.
Fiant pilulæ lx. Capiat. j.—iv. omni nocte horâ decubitûs.

* 1. Take Submuriate of Mercury,
Precipitated Sulphur of Antimony, of each half a drachm.
Gum Guaiacum, two drachms.
Syrup, a sufficiency.
Form sixty pills out of the mass, and let from one to four be taken every night at bed-time.

gradually to twelve or fifteen ; or the pills as advised under that of Elephantiasis, may be employed ; and indeed, as the disease is accompanied by symptoms of general debility, the remedy appears well calculated to prove serviceable.

As a putrid disposition evidently prevails in leprosy, might not a long-continued course of the bark of cinchona joined with muriatic or nitric acid, be likely to produce a good effect? In incipient cases, I think there can be no doubt but that the cinchona bark, with the mineral acids, might be of service. Possibly the oxygenated muriate of potass may be a good auxiliary. If tried, it ought to be given in the form of a solution.

To counteract the corrosive effect of the matter discharged from the sores as well as to lessen the disagreeable sensation in the skin, the surface of the body should be washed frequently with some saponaceous solution, or with lime water in a tepid state. The ulcers ought to be regularly dressed with some absorbent ointment.

To prevent the leprosy from spreading, it will be necessary to avoid any kind of close communication with persons who are infected. It is too customary with proprietors and managers of estates in the colonies to turn such negroes adrift on the public, and being thus exonerated from labour and servitude, they range about, and infect all those with whom they either cohabit or associate. It is true, indeed, that the legislative body in many of the islands has enacted laws for the prevention of this evil ; but, from a neglect in the magistrates and constables to enforce them, they are wholly disregarded, and the disease has become a very frequent one.

The mild species of leprosy met with in cold climates is to be removed by small doses of mercury conjoined with antimony, as in the pilula hydrargyri submuriatis composita, given so as to produce an alterative effect, assisted by warm bathing and a decoction of the woods, mezereon, lobelia syphilitica, and the decoct. dulcamaræ or decoct. astragali, as mentioned under the head of Syphilis. These will cleanse and soften the skin. The mineral solution may prove a good remedy in many cases of lepra, and we may add the nitric acid as an auxiliary to it. The conjoint effect of these medicines possibly may accomplish what either separately would not. A gentle aperient of the saline class ought to be repeated at due intervals during the progress of the cure. As a vehicle for both the mineral solution and nitric acid, we may employ the decoctum ulmi, of which the patient may drink a pint daily.

It sometimes happens that the skin of leprous persons in this country is so tender and irritable as to be disagreeably affected by even the mildest applications. In these instances, a strong infusion of the bruised leaves of fresh digitalis, with a small proportion of the liquor plumbi subacetatis dilutus, has proved highly soothing and curative.

Harrowgate water has been found very serviceable, not only in

a great variety of cutaneous complaints of a trifling nature, but likewise in many of the more obstinate and painful disorders of the skin, such as the elephantiasis and leprous eruption. These complaints receive material advantage by employing the warm bath, which accordingly makes part of the plan of cure; and during its use, very moderate doses of the water warmed, and repeated at proper intervals, will materially assist in keeping up that full perspiration which is promoted by the bathing, and always continued for some hours, by confining the patient in bed after immersion wrapped up in flannel. In this respect, however, the cold sulphureous waters are not so advantageous as those which are naturally hot; for the former, in being artificially warmed, must lose some of the sulphureous gas, on which part of their efficacy, even when applied externally, must depend; but we have no natural springs of this kind in our country. They are, however, to be found at Aix-la-Chapelle, in Germany, and in our two colonies, the islands of Jamaica and Nevis. Persons resident in these places, who labour under leprous eruptions, should not fail to avail themselves of the advantages to be derived from these waters.

We are informed by Dr. Kinglake,* that, in several cases of chronic eruption on the cuticular surface, which had resisted the warm bath, the internal and external use of the oxymuriate of mercury, antimonials, guaiacum, and likewise the nitric acid, he performed complete cures by giving the patient ten drops of the diluted sulphuric acid three times a day in a tea-cupful of pure water, and by washing the eruptions with a solution of the same mixed in water, in the proportion of half a drachm of the former to one pint of the latter. This was done by dipping a small piece of linen in the liquid, and moistening with it the parts affected. He observed that the external application was productive of severe pain at first, but this inconvenience daily diminished. The dose of diluted sulphuric acid above mentioned is calculated for a child of three years of age, but adults may take thirty drops thrice a day in half a pint of water, gradually increasing the quantity to a tea-spoonful or two. If attended with any purgative effect, a small addition of tinctura opii may be made.

PLICA POLONICA vel TRICHOMA, or PLAITED HAIR.

Plica Polonica is a disease in which a morbid matter is deposited upon the hair, and binds it together in such a manner that to unravel it is impossible. In Poland, Lithuania, Hungary, Transylvania, Prussia, Russia, and Tartary, it is endemial; but the scalp is not its only seat, for it sometimes extends to the hair of the pubes.

* See Medical and Physical Journal, vol. iv. p. 482.

The exciting causes of the disease are uncertain, as neither the air, water, nor food seem to have any effect in producing it; nor are cleanliness and regular combing of the hair, it is said, any defence against it. Certain it is, however, that it prevails only among the lower class of people, and who are neglectful of personal cleanliness; for the opulent are generally exempt from plica, and the disease is pretty generally met with among the poor who live in filth and misery, particularly among the Jews, a race of people very negligent of cleanliness both in their persons and dwellings. From some observations made by Mr. Frederick Hoffman, surgeon to the Prussian army, it appears that a predisposition to it may be transmitted from parents to their offspring; and he observes,* that as no other cause can be assigned for the disease, it is probable that it arises, according to the general opinion, from contagion; a contagion which, like that of psora, can be communicated by contact only.

I confess that I look on plica polonica as a mere local disorder arising from a great length of hair, and neglect of combing it, and produced evidently by sweat, dirtiness, and vermin; for the hair, when kept short, and due cleanliness is observed, never contracts plica, as I am informed. The military police enforces this on the Polish militia and recruits every year; and if any of them happen to have the plica, their locks are cut off, and their heads shaved without scruple or danger.

We are told by Mons. Alibert, physician to the hospital of St. Louis, at Paris,† that as the Poles rarely comb, and scarcely ever wash or clean their hair, which they suffer to grow very long; and as they wear warm fur caps, the disease in question is much favoured thereby. By the heat, he says, an afflux of humours is determined towards the head, which thus becomes a common sewer to all the organs of the body, whilst by its nastiness the pores are so obstructed that the exuberant fluids are forced through the canals of the hair. He observes, that plica is sometimes communicated by contagion, and sometimes by suckling, but he has noticed at the same time that strangers are but little liable to be affected by it.

The nature of the disease was narrowly investigated by Baron Larrey,‡ Inspector General of the French Army, when at Warsaw, and he was fully satisfied that it is a local and factitious complaint, produced by dirt and neglect; likewise that it is not contagious, and may be cured with facility, notwithstanding the absurdities which prejudice has set forth to the contrary.

According to Monsieur de la Fontaine,‖ an eminent physician

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* See his Observations on Plica Polonica, vol. iv. part ii. of the Memoirs of the Literary and Philosophical Society of Manchester.

† See his Description des Maladies de la Peau.

‡ See his Mémoires de Chirurgie Militaire et Campagnes.

‖ See article the first, vol. the 1st. of the Annals of Medicine for the Year 1795, by Andrew Duncan, M. D.

at Warsaw, the proximate cause of the disease seems to be a peculiar morbid matter, which is clammy and acrid, has its seat in the lymph, and is deposited critically upon the hair.

An opinion universally prevalent with the Polish peasants, is, that the disease is a salutary effort of nature to expel a morbid matter from the body, and that to interrupt the course of it would be productive of danger: hence they make no attempt to cure or even palliate the complaint. This opinion is, however, erroneous, as will appear from what I have already mentioned, as well as from the occurrence afterwards recited.

Both sexes have been observed to be equally liable to the attacks of plica. It more usually comes on during infancy than after the age of puberty. Besides the human species, other animals, such as the horse, and those of the canine species, as dogs, wolves, and foxes, are said to be subject to this complaint.

The accession of the disease, we are told, is commonly preceded by general lassitude and heaviness, pains in different parts of the body, particularly in the head and eyes, and some degree of febrile affection, all of which diminish or cease immediately on the appearance of the plica. Most usually the hair of the head alone, is affected, and that only in particular parts. In these the hairs grow considerably longer than in the rest, they often seem greatly enlarged in their diameter, and are much knotted and entangled; being also covered with the viscid matter which issues from their roots, and which assists in glueing them together.

In proportion as the quantity of this gluten and the implication of the hair increase, it is still more and more difficult to clean and comb it: hence a degree of phthiriasis is produced, and the head contracts an extremely fetid smell, to which, however, the Polish peasants are so much accustomed, that they endure it without complaint or any manifest inconvenience.

In consequence of frequent scratching, the nails of the fingers being imbued with the matter, now and then become diseased: they increase in thickness, change their colour, and are unequal on their surface.

The disorder frequently continues for life, when neglected; but is not found to be attended with fatal consequences, except perhaps from an injudicious mode of treatment.

In the beginning of the disease, we are recommended by Mons. de la Fontaine to employ resolvent, attenuant, saponaceous, demulcent, and emollient remedies, to prepare the morbid matter for a crisis. If these be not sufficient, he adds extract of aconite, or hemlock, the submuriate of mercury, or some antimonial. In general, he says, antimony is a specific in this disease. If it be complicated with lues, muriated mercury in small doses produces the very best effects, but salivation is highly detrimental in every case.

These remedies can only be employed when no fever is present; in this case blood-letting and evacuants must be used very

cautiously. Mons. de la Fontaine compares the disease to the small-pox, and observes, that when the fever is too weak to produce the eruption, it must be increased; when it is too violent, it must be diminished. Hence the strength of the patient must often be supported with a generous diet. To bring about a crisis, we are advised to make use of sudorifics.

If the morbid matter be deposited on the surface of the body, it occasions malignant and obstinate sores, which give a great deal of trouble. Antimony should always be an ingredient in whatever medicine we administer.

When our endeavours prove inadequate to produce the crisis, inoculation of the disease will often, it is alleged, affect it. This is performed by putting on a cap which has just been worn by one who has a recent plica. After a complete crisis, the plica separates from the head, and remains attached only by the sound hair. If it has become dry, and all symptoms have ceased, it may be cut off.

External remedies are always proper and necessary; such as the application of warmth to the head in the form of vapour, warm bath, or fomentation; washing the head with a warm solution of soap will likewise prove serviceable. Hair-powder rubbed with mercury will be a good remedy to destroy the vermin. Where the patient is much incommoded by a headach, the application of a blister to the neck or between the shoulders may possibly relieve it.

It has before been stated that the opinion generally entertained in Poland, that there is danger in cutting of the hair in this disease, and promoting the cure by external remedies, is wholly erroneous. The following fact, which occurred at Breslaw, and communicated by Dr. De Carro, of Vienna, in a letter to the Editors of the Bibliothèque Britannique, fully establishes this assertion.

"Some years ago, one third of the recruits of the regiments of artillery brought from South Prussia, were attacked with plica polonica. An order was received from Berlin to send to that city all those that were infected, and to take care that the disease was not communicated to others. This order, it appears, was not agreeable to the commanders of companies, as it would have occasioned the loss of at least two hundred young soldiers. M. Hœnel, surgeon-major to the artillery regiment, became mediator in the cause; he caused the recruits to be brought on the ramparts, and ordered that a general shaving should be made. In a little time, a pile of plica was accumulated; these trophies were then cast into a ditch, and the heads of the men carefully washed with soap and water daily for some weeks; by this simple method those dirty Polanders were speedily transformed into good soldiers, without having in the least suffered by the loss of this precious ornament of their heads."

This statement clearly points out the absurdity of the opinion

entertained by the generality of the Polanders, and shows that the disease in question may be cured with as much safety as tinea capitis.* It likewise evinces that many of the external remedies which have been advised in the latter may be employed with advantage in the former: indeed, tinea capitis and plica polonica seem, I think, to be very similar diseases.

SCORBUTUS, OR SCURVY.

THE characteristics of this disease, as affixed by Dr. Cullen, are debility; bleeding of the gums; spots of different colours on the skin, for the most part livid, particularly at the roots of the hairs, occuring in cold countries, after living on putrescent salted animal food, with a deficiency of recent vegetable matter.

The scurvy is a disease of a putrid nature, much more prevalent in cold climates than in warm ones, and which chiefly affects sailors, and such as are shut up in besieged places: owing, as is supposed, to their being deprived of fresh provisions and a due quantity of acescent food, assisted by the prevalence of cold and moisture, and by such other causes as depress the nervous energy; as indolence, confinement, want of exercise, neglect of cleanliness, much labour and fatigue, sadness, despondency, &c. These several debilitating causes, with the concurrence of a diet consisting principally of salted or putrescent food, and foul water, will be sure to produce this disease. It seems, however, to depend more on a defect of nourishment than on a vitiated state; and the reason that salted provisions are so productive of the scurvy is, most probably, because they are drained of their nutritive juices, which are extracted and run off in the brine. As the disease is apt to become pretty general among the crew of a ship when it has once made its appearance, it has been supposed by many to be of a contagious nature; but the conjecture seems by no means well founded. The circumstance arises most probably from the men being alike exposed to the exciting causes of it.

A preternatural saline state of the blood has been assigned as its proximate cause. It has been contended by some physicians, that the primary morbid affection in this disease is a debilitated state of the solids, arising principally from the want of aliment.

Various theories have indeed been advanced with respect to scurvy. By Sir John Pringle it has been supposed to be owing to a putrescency of the blood. By Dr. Lind, Dr. Blane, and Dr. Millman, it has been looked upon as a disease of debility, having its origin in the weakness of the organs of digestion, or in the gradual diminution of the vital power by the remote causes; or that it is owing rather to a defect of nourishment than to a

* See vol. vi. p. 27, of the Medical Transactions of the London College, for a paper to this purport.

vitiated state of it. Dr. Trotter, reasoning from experiments of Dr. Goodwin concerning the action of dephlogisticated air on the blood, infers that the black colour of this in scurvy is owing to the abstraction of this principle (dephlogisticated air,) and that fresh vegetables cure the disease by restoring to the blood this lost principle. Dr. Beddoes supposes scurvy to be owing to a gradual abstraction of oxygen from the whole system, just as death is produced by drowning, by withholding all at once the same substance from that blood which is to pass the posterior cavities of the heart. Of the two causes of scurvy, want of fresh vegetables, or want of air sufficiently furnished with oxygen, Dr. Beddoes thinks the latter is by far the most powerful. Captain Cook's unexampled success in preserving his crews from the scurvy during his last two voyages, seems to have been owing in a great measure to his extreme care in keeping every part of the ship well ventilated. The crew on many occasions were reduced to salt provisions, and much longer out of sight of the land than many other ships which have been dreadfully afflicted with the scurvy. In his last voyage there did not appear among the men any symptom of this disorder; and in his second, only one man had it in any considerable degree.

The scurvy comes on gradually, with heaviness, weariness, and unwillingness to move about, together with dejection of spirits, anxiety, and oppression at the præcordia, considerable loss of strength and debility. As the disease advances in its progress, the countenance becomes sallow and bloated; respiration is hurried by the least motion; the teeth become loose; the gums are spongy, swelled, and bleed upon the slightest touch; the breath is very offensive; livid spots appear on different parts of the body; old wounds which have long been healed up, break out afresh; severe wandering pains are felt, particularly by night; the skin is dry; the urine small in quantity, turning blue vegetable infusions of a green colour; and the pulse is small, frequent, and towards the last intermitting; but the intellects are for the most part clear and distinct. In some cases of scurvy, and even in its incipient stage, nyctalopia has been observed as one of the attendant symptoms.*

By an aggravation of the symptoms, the disease in its last stage exhibits a most wretched appearance. The joints become swelled and stiff, the tendons of the legs are rigid and contracted, general emaciation ensues, hæmorrhages break forth from the nose, ears, anus, and other parts of the body, fetid evacuations are discharged by stool, and a diarrhœa or dysentery arises, which soon terminates the tragic scene.

Scurvy as usually met with on shore, or where the person has not been exposed to the influence of the remote causes before

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* See Dr. Blane's Work on the Diseases of Seamen.

enumerated, is unattended by any violent symptoms; as slight blotches with scaly eruptions on different parts of the body, and a sponginess of the gums, are the chief appearances to be observed.

In forming our judgment as to the event of the disease, we are to be directed by the violence of the symptoms, by the situation of the patient with respect to a vegetable diet, or other proper substitutes, by his former state of health, and by his constitution not having been impaired by previous disorders.

The person being capable of muscular motion with little reduction of strength, the health not injured by previous disease, the skin moist, the pulse slow, a gentle bilious diarrhœa, the absence of ulceration, and the petechiæ, if any appear, being of a bright red colour,—are to be looked upon as favourable circumstances; whereas great prostration of strength, flushed countenance, quick weak pulse, extreme oppression at the præcordia, fetid and involuntary evacuations, petechiæ and maculæ of a dark livid colour, and profuse hæmorrhages of dissolved blood, denote the highest degree of danger.

Dissections of those who die of scurvy have always discovered the blood to be in a very dissolved state. The thorax usually contains more or less of a watery fluid, which in many cases possesses so high a degree of acrimony as to excoriate the hands by coming in contact with it. The cavity of the abdomen contains the same kind of fluid. The lungs are black and putrid; and the heart itself has been found in a similar state, with its cavity filled with a corrupted fluid. In many instances, the epiphyses have been found divided from the bones, the cartilages separated from the ribs, and several of the bones themselves dissolved by caries. The brain seldom shows any marks of disease.

From experiments made on the blood and urine of scorbutic patients, it appears that three ounces of blood, on cooling, consisted of two ounces of coagulum and one of serum. The coagulum was composed of two parts; that on the top, about the sixteenth of an inch, was of a florid red, and tough; that in the bottom, of a deep red, approaching to black, and easily divided. The serum with respect to colour, was not uncommon. Vinegar did not alter the colour of the black part of the coagulum. By the addition of lemon-juice, it became somewhat lighter; on the admixture of a solution of nitre in vinegar, it became of a florid red; the same took place with nitre and lemon-juice. By the subcarbonate of ammonia and diluted sulphuric acid, the coagulum was turned black, and was again rendered florid by the addition of nitre in the juice of lemons, and in vinegar.

To counteract the principal remote causes of the disease; viz. the effect of salt provisions, and the want of fresh meat and vegetables, every ship bound on a long voyage should be supplied with an ample store of flour, eggs for puddings, pearl barley,

groats, peas, oatmeal, rice, sago, vermicelli, portable soup, potatoes, and other vegetables in season, sour krout (which is cabbage fermented with vinegar.) raisins, currants, prunes, and other dried and fresh fruits, various spices, many kinds of medicinal herbs, as balm, mint, penny-royal, sage, &c.; together with tea, coffee, cocoa, sugar, treacle, honey, Seville oranges made into marmalade, essence of spruce, and fresh wort. High encomiums have indeed been passed on the efficacy of this last by all the navigators who have made trial of it, and they seem by no means to have been unworthily bestowed; but as its salubrious qualities are greatly impaired by becoming damp and mouldy, every possible care should be taken to prevent this from happening.

Besides the articles which have been enumerated, the ship should likewise be supplied with a sufficient store of spirituous and fermented liquors; as rum, brandy, beer, and porter, together with wine, cider, vinegar, and other acids, but more particularly the concrete juice of lemons, limes, and oranges, together with these fruits in their natural state. If possible, a milch cow should be embarked, and there ought to be an abundance of live stock.

If it can be avoided, salted provisions should by no means be constantly served out to the crew; but fresh animal food, with a due proportion of such farinaceous substances as the ship is supplied with, or of such fresh vegetables and fruits as have been procured at whatever ports it may have touched, ought to be delivered out to the men. The vegetable food with which seamen are principally supplied, consists of flour, biscuit, and peas; and it very frequently happens that a great deal of the former which is served out to crews on board of His Majesty's ships, is in a decayed state, and by no means equal to the support of their strength. The biscuit likewise which is furnished them is often too old, is worm-eaten, and has lost much of its nutritive quality.

The health of seamen may be supposed to depend considerably on the goodness and purity of the water which they drink, as well as on the nutritive quality of their food; but it too frequently happens, by an inattention in laying in the store of this necessary article, that it very soon becomes both putrid and offensive, and in this state they are obliged to make use of it. Nothing has been found so effectual for preserving water sweet at sea, during long voyages, as well charring the insides of the casks before they are filled: and certainly it would be highly advisable for our Admiralty Board to issue orders for the universal adoption of this process throughout the navy. Care ought at the same time to be taken that the casks should never be filled with sea water, as sometimes happens, in order to save the trouble of shifting the ballast, because this tends to hasten the corruption of the fresh water afterwards put into them. When the water becomes impure and offensive at sea, from being ignorant of the preservative effect produced on it by charring the casks previous to their being filled,

it may be rendered perfectly sweet by putting a little fresh charcoal in powder into each cask before it is tapped, or by filtering it through fresh burnt and coarsely pulverized charcoal.

Mr. Williams of Portsmouth, one of the gentlemen entrusted by the Admiralty Board with making trials as to the best method of preserving water during long sea voyages, has experienced that of all the remedies tried during a course of many years' observation, none has answered better than the practice of charring the water-casks on their inside. We are informed by him, that he has seen three casks of water in one of His Majesty's dock-yards, of three years' standing, and perfectly sweet. There is, therefore, little doubt that water may be preserved fresh and fit to drink any length of time in charred barrels. It has generally been supposed that the putrefaction to which water is liable, arises from its containing organic matter; but this is not so much the case as a real decomposition of the water being effected by the chemical action of the wood, to which it is constantly exposed.

To preserve seamen in health, and prevent the prevalence of scurvy and other diseases, it will be further necessary to keep the ship perfectly clean, and to have the different parts of it daily purified by a free admission of air, when the weather will admit of it; and likewise by frequent fumigations, agreeable to the plan mentioned under the head of Typhus Gravior. This precaution will more particularly be necessary for the purification of such places as are remarkably close and confined.

The coldness and moisture of the atmosphere are to be corrected by sufficient fires.

Cleanliness on board of a ship is highly necessary for the preservation of the health of seamen; but the custom of frequent swabbings or washing between the decks, as is too frequently practised, is certainly injurious, and greatly favours the production of scurvy and other diseases, by a constant dampness being kept up.

The removal of all offensive substances by scraping and sweeping has indeed been more accurately attended to during the late war than was formerly the case in the Navy; and the washing of decks, particularly in cold and damp weather, has been much less practised. Dryness, so essential to health and comfort, is now more studied; and rubbing with hot sand, scraping, and portable fires, have been found much more salutary operations than frequent washing. Gravel, sand, and other earthy substances, which have hitherto proved prolific sources of foul air, by absorbing the putrescent matter on board of ships, have lately been dispensed with throughout the Navy; and what are called iron tanks are now pretty generally substituted for the lower tier of water-casks, and placed over the iron ballast.

The men should be made to air their hammocks and bedding every fine day; they should wash their bodies and apparel often,

for which purpose an adequate supply of soap ought to be allowed; and they should change their linen and other clothes frequently. In rainy weather, on being relieved from their duty on deck by the succeeding watch, they should take off their wet clothes, instead of keeping them on and lying down in them, as they are too apt to do. Two sets of hammocks ought to be provided for them. In fine pleasant weather and after their usual duty is over, they should be indulged in any innocent amusement that will keep their minds as well bodies, in a state of pleasant activity; and perhaps none is more proper than dancing, which makes a fiddle, or a pipe and tabor, desirable acquisitions on board of every ship bound on a long voyage.

No seaman labouring under any disease, especially one of a contagious nature, should be suffered to remain among those that are in health. On the contrary, he ought quickly to be removed to the hospital or sick-room, a place which every ship that has a number of men on board should by all means be furnished with; and this should be situated in an airy and dry part of it.

While speaking of the means of preserving the health of seamen, it may not be improper to observe, although not immediately relating to the disease I am here treating of, that in warm climates the crews of ships are healthier at sea, when the air is dry and serene, and the heat moderated by gentle breezes, than when rainy or damp weather prevails; and they usually enjoy better health when the ship is moored at a considerable distance from the shore, and to windward of any marshy ground or stagnant waters, than when it is anchored to leeward of these, and lies close in with the land. Masters of vessels, stationed at or trading to any parts between the tropics, will therefore act prudently, when they have arrived at their destined port, to anchor a considerable distance from the shore, and as far to windward of all swamps, pools, and lakes, as can conveniently be done; as the noxious vapours which will be wafted to the crew, when the ship is in a station of this nature, will not fail to give rise to diseases among them.

When unavoidably obliged to submit to such an inconvenience, some means ought to be adopted to prevent disagreeable consequences from ensuing. For this purpose a large sail should be hoisted at the foremast or most windward part of the ship, so as to prevent the noxious vapours from coming abaft; the cabin, steerage, and between the decks, should be fumigated now and then, and the seamen be made to smoke tobacco freely.

Unless absolutely necessary, it will be improper to permit any of the crew to sleep from on board, when stationed off an unhealthy shore; but when necessity obliges them to do so, for the purposes of wooding or watering, a tent or marquee should be erected, if a proper house cannot be procured; and this should be pitched on the driest and highest spot that can be found, being so situated as that the door shall open towards the sea. Under

cover of this, a sufficient number of hammocks are to be suspended for the accommodation of the men by night, as they should by no means be suffered to sleep on the ground.

If the tent happens unfortunately to be in the neighbourhood of a morass, or has unavoidably been pitched on flat moist ground, it will be advisable to keep up a constant fire in it by day as well as by night; and as a further preventive against those malignant disorders which are apt to arise in such situations, the men should be directed to smoke freely of tobacco, and to take an ounce of the tinctura cort. cinchonæ composita every morning on an empty stomach, and the same quantity again at night.

In tropical climates, the healthiness of seamen will much depend upon avoiding undue exposure to the sun, rain, night air, long fasting, intemperance, unwholesome shore duties, especially during the sickly season, and upon the attention paid to various regulations and preventive measures. The bad effects of remaining too long in port at any one time, and independent of irregularities, of harbour duties, particularly after sunset, as well as during his meridian power, cannot be too strongly adverted to by the commander of every ship; and therefore a measure of the highest importance in the British navy is the employment of negroes and natives of the country, or at least men accustomed to the torrid zone, in wooding, watering, transporting stores, rigging, clearing, careening ships, &c.; and, in fine, in all such occupations as might subject them to excessive heat or noxious exhalations, which cannot fail to be highly dangerous to the health of the unassimilated European.

The practice of heaving down vessels of war in the West Indies, in the ordinary routine of service at least, cannot be too highly deprecated, as well from the excessive fatigue and exertion it demands, as because it is a process which requires for its execution local security, or, in other words, a land that is locked, and therefore generally an unhealthy harbour. The instances of sickness and mortality from the effects of clearing a foul hold in an unhealthy harbour, are too numerous to be specified; but Dr. Bancroft* makes mention of a particular one, on the authority of Dr. Dickson, in speaking of the production of the yellow fever, accompanied in a great many cases with black vomit and consequent death, on board the Circe frigate, principally from the duties of clearing the hold and heaving down; by which so many of the ship's company were soon after attacked with this fever, that one hundred and forty-six men were obliged to be sent to the hospital at Antigua.

A very productive source of disease in warm climates among seamen is, an immoderate use of spirituous and fermented liquors, as they are too apt, whilst under a state of intoxication, to throw

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* See his Sequel to an Essay on Yellow Fever.

themselves on the bare ground, where perhaps they lie exposed for many hours to the influence of the meridian sun, the heavy dews of the evening, or the damp chilling air of the night. The commander of a ship who pays attention to the health of his crew, will therefore take every possible precaution to prevent his men from being guilty of an excess of this nature : and likewise that they do not lie out in the open air, when overcome by fatigue and hard labour.

The different voyages of that celebrated navigator, Captain Cook, as well as that of the unfortunate La Pérouse, incontestably prove that, by due care and a proper regimen, seamen may be preserved from the scurvy and other diseases which have formerly been inseparable from long sea voyages ; and that they can support the fatigues of the longest navigations in all climates, in all latitudes, in the midst of fogs, and under a burning sun.

In all long voyages it ought to be our object not only to find out and employ the most effectual means to cure the scurvy when it shows itself, but likewise to prevent its arising at all ; as the taint never fails to give a fatal or malignant tendency to the other disorders incident to seamen, such as ulcers, dysentery, &c. ; and with this view, our preventive plan ought to commence from the first day on which the sailing stock of fresh vegetables and ship's beer is expended ; since from many experiments it appears, that much greater success is likely to attend our endeavours in this way than by reserving them for the period in which the marks of a scorbutic diathesis begin to manifest themselves.

When, from the want of the proper precautions before pointed out, the scurvy makes its appearance among a number of men, be it on board of a ship or in a close garrison, we are then to counteract its effects, first, by obviating the putrid state of the system ; and secondly, by restoring it to its former vigour.

The first of these is to be accomplished by a diet of fresh animal and vegetable food, but more particularly the latter, consisting of garden and water-cresses, mustard, horse-radish, common radish, scurvy-grass, celery, endive, and lettuces, all of which may be eaten in their crude state ; together with spinach, beet, carrots, turnips, cabbages, cauliflowers, brocoli, asparagus, the young shoots of hops, &c., which may be prepared by any common process of cookery. To these may be added, a free use of ripe fruits, especially those of a subacid kind, such as oranges, shadocks, and others of this class. For ordinary drink, the patient may use milk, or its productions, as whey, butter-milk, &c., or else an infusion of malt or spruce.

Such things are, however, only to be procured on shore, and therefore cannot be obtained for a ship's crew, unless they remain in port. When at sea, other substitutes must be resorted to.

One of the most effectual of this kind has been found to be lemon-juice, with which most ships belonging to Government, and bound on a long voyage, are, I understand, now supplied ; and I

am informed that the daily regulated allowance is now one fluid ounce, mixed with one ounce and a half of sugar. Where fresh vegetables are not to be obtained, we ought to have recourse to this. To render its effects more certain, and prevent it from irritating the bowels, we should mix it with a sufficient quantity of water and sugar, which will make a pleasant drink usually known under the name of sherbet. If a due proportion of wine is added, it will render it still more antiseptic. The quantity of juice used during the first three or four days, ought not to exceed two ounces daily, but it may afterwards be increased to three or four *per diem*.

In Dr. Trotter's Medicina Nautica is inserted a letter from Mr. A. Baird, surgeon to the Hector ship of war, communicating to him the wonderful benefit derived from the use of lemon-juice in a voyage to and from the East Indies, during which, although the scurvy became very prevalent, he did not lose a single man. His words are, "When I consider the alarming progress which the scurvy was making amongst the Hector ship's company previous to the administration of lemon-juice as a preventive, the sudden check that disease met with afterwards, and the powerful effect of the acid in very bad cases, I think I shall not be accused of presumption when I pronounce it, if properly administered, a most *infallible remedy* both in the cure and prevention of scurvy."

Where the fresh juice cannot be procured, we may substitute with the greatest advantage the citric acid in a concrete form, as first prepared by Mr. Coxwell. We are informed by Dr. Trotter,* that he has experienced its powers against scurvy to be equal to any effect he has ever observed from the recent fruit in its most perfect state. Other practitioners have reported alike favourably of it. It takes from sixteen to eighteen parts of water to bring the concrete acid to the standard of lemon-juice. It is obtained after the manner of Scheele,† by combining the fresh vegetable acid with lime, and then precipitating by means of the sulphuric acid.

Dr. Trotter observes, that Government mistake in making their contract for lemon-juice for the use of the Navy, as what is furnished is often adulterated with the acetous acid, and sometimes contains the pulp, which render it liable to ferment. Lemon and lime-juice, he says, should be procured in Portugal and the West Indies, and in each place be combined with calcareous earth. It may be imported in barrels, and in that state be sent to sea, when the separation of the liquid acid is so easy a process as to require no trouble, and the medicine will be always in the best state. Combined with calcareous earth, the acid will remain unchanged for a great length of time.

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* See Medical and Physical Journal, vol. iv. p. 154.
† See Crell's Journal for 1784.

It has been common to employ the fossil acids in this disease; but there is some reason to doubt if they are of any service, and it is certain they are not effectual remedies. Moreover, they can hardly be thrown in in such a quantity as to be useful antiseptics.

In a treatise on Scurvy by Mr. D. Patterson, surgeon in the Navy, we are informed, that from certain reasons, he was induced to try a solution of the nitrate of potass in common vinegar in several cases of this disease, which, with inexpressible pleasure, he saw to succeed in every one of them; and from frequent trials of it he is convinced that the scurvy may be cured at sea without the assistance of recent vegetable matter. If this turns out as stated, the discovery will indeed prove of great national advantage.

Mr. Patterson supposes that the good effects of the nitrate of potass in mitigating or removing the disease, are to be accounted for solely from the dephlogisticated or vital air it contains, and that it may be rendered more active by being combined with an acid. He allows common vinegar to be of little or no utility when given by itself; yet supposes, that if it was charged with dephlogisticated or oxygen air it might prove highly beneficial; and this he presumes to be effected by the addition of nitre. The following is his method of preparing this new remedy, and making use of it:—

At first he dissolved two ounces of nitre in one quart of the ship's vinegar, and gave half an ounce of the solution (which he named acidum nitrosum, or nitric vinegar) to some twice, to others thrice in the day, and as frequently bathed their blotched and ulcerated limbs with the same. From the good effect it had, and from its not producing the smallest degree of nausea, colic, or diarrhœa, he was induced to augment the dose to an ounce, and to repeat it as often as before.

Finding by far the greater number of scorbutics who were under his charge bore the increased dose of the medicine without expressing the least uneasiness, he now, instead of two, dissolved four ounces of nitre in one quart of vinegar, and gave from half an ounce to two ounces of this strong solution twice, thrice, or four times in the day, if they were either blotched, stiff, or ulcerated. In this manner, we are informed, he continues to use it.

He adds, "Some patients cannot bear the nitric vinegar without the addition of water; while others, without the least inconveniency, bear it undiluted. The discharge by stool, or the presence of gripes and nausea, guide me with respect to increasing or diminishing the dose of the nitric vinegar; but at the same time it is not a slight degree either of nausea, colica, or diarrhœa, that renders an alteration in the quantity of the medicine necessary. To a great number of scorbutic patients eight ounces of this strong solution, containing one ounce of nitre, have in the course of the day, as long as such a quantity was necessary, been administered to each

with the greatest success. Also, a circumstance no less curious than pleasing, large and frequently-repeated doses of this medicine have been given in cases of dysenteria scorbutica; and instead of increasing I have always found it remove the disease. Sometimes, notwithstanding the free use of the nitric vinegar, I have known constipation take place to a considerable degree; in which case I have found intermediate doses of the potassæ supertartras necessary and highly advantageous. This very constipated state generally occurred where the disease was far advanced; but in a few particular cases, in delicate habits, and where the disease was not far advanced, I perceived even small doses of the nitric vinegar ruffle the stomach and intestines; to prevent or remove which I have found two, three, or four grains of camphor, with each dose of the medicine, very effectual."

The effects of this medicine are as follow: "During a course of the nitric vinegar the belly in general is kept gently lax; the discharge of urine is increased, and changes from an alkaline to a healthy nature; the skin becomes open and more agreeable to the touch; the chilliness is changed to a pleasing warmth; and the pulse acquires steadiness and healthy strength. Sleep becomes more and more natural. The sallow and the gloomy is gradually changed into a clear and cheerful countenance. By degrees the inflammation of the mouth and nose subsides; the gums heal and get firm. The lower extremities lose, faster than could have been supposed, their livid hue; they gradually become softer, less painful, and more flexible, and ulcers put on a healthy appearance and skin over. The great oppression about the breast and stomach gives way, and the cough and the breathing become less laborious. The appetite and the sense of taste are restored; the depression of spirits and the lassitude are not remembered; the strength increases, and at last health returns."

Mr. Patterson, in comparing the effect of vegetable acid with that of the nitric vinegar, writes as follows:—"In the month of July, 1794, at sea, a small quantity of limes were purchased by order of Admiral Murray, for the use of the scorbutics at that time on board; but instead of depending altogether on their power, I gave them only to a certain number, on purpose to compare their effect with that of the nitric vinegar, which was more generally administered; and from what I have seen of both, and after having weighed all circumstances, I am at present inclined to decide in favour of the latter."

Such is the report made by Mr. Patterson on the effect of these two acids; and as he seems to attribute the good effect of the remedy which he most approves of to the nitre it contains, and not to the vinegar, I beg leave to propose the following query: Might not a solution of the nitrate of potass in lemon or lime-juice (which of themselves are powerful remedies in scurvy) be preferable to a solution of it in vinegar, or even to these acids given by themselves?

By the means which have been pointed out, together with some other auxiliaries, such as spruce-beer, fresh infusions of malt or wort, sugar, and the succus cochleariæ compositus, we are induced to suppose that we shall in most cases, even in those of a desperate nature, be able to obviate the putrid tendency of the system, and effect a cure. Introducing oxygen into the system by any kind of means may likewise prove a good auxiliary.

In appears that the gases were used by the celebrated navigator La Pérouse in his voyage round the world; but he very wisely observes, that bottles-ful of them might be swallowed without doing seamen a thousandth part of the good they receive from good slices of roast beef, turtle, fish, fruit herbs, &c.

In the course of the disease, particular symptoms may arise which will require a separate treatment. Pains of the belly are to be allayed by emollients and opiates; oppression at the chest and impeded respiration by blisters, for bleeding is never to be used; contractions of the hams and calves of the legs are to be relieved by fomenting the parts with warm vinegar and water, and by the application of emollient poultices and frictions; sponginess of the gums and looseness of the teeth are to be obviated by washing the mouth frequently with gargles of an astringent and antiseptic nature;* and foul ulcers are to be cleansed and healed by washing them with lemon-juice, or a tincture consisting of equal parts of that of myrrh and cinchona bark, and then dressing them with some kind of digestive ointment, or a poultice of sorrel (see Ulcers.) Some Navy surgeons report that they have known the most obstinate ulcers of a scorbutic nature cured by applying a paste of oatmeal and water to them, the surface being sprinked with the liquor plumbi subacetatis. In very bad cases of ulceration it is probable that the application either of the cataplasma effervescens, or cataplasma carbonis, as mentioned under the head of Gangrene, might be attended with a very good effect.

Dr. Harness, physician to the British fleet in the Mediterranean some years ago, informs us,† that after the failure of other remedies in the cure of scorbutic ulcers, and those where there was a tendency to mortification, he found the application of the gastric

† See Dr. Duncan's Annals of Medicine for 1797.

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* 1. ℞ Infus. Rosæ Compos. f. ℥vj.
Aluminis, ℥jss.
Mel. Optim. f. ℥ij. M.
ft. Gargarisma.
Vel,
2. ℞ Decoct. Cinchonæ, f. ℥vj.
Tinct. Myrrh. f. ℥jss.
Acid. Muriatic. ♏ xij.—xx. M.

* 1. Take Compound Infusion of Roses, six ounces.
Alum, one drachm and a half.
Honey, two drachms.
Mix them for a gargle.
Or,
2. Take Decoction of Peruvian Bark, six ounces.
Tincture of Myrrh, one ounce and a half.
Muriatic Acid, from twenty to thirty drops.

fluid of graminivorous animals to have been productive of the happiest consequences.

If in the course of the disease the bowels should not be loosened by the use of fresh vegetables, and costiveness prevail, we may then advise the taking a decoction of tamarinds with a little of the potassæ supertartras, to obviate it. Where the skin is dry and parched, a gentle diaphoresis may be excited by a decoction of the woods joined with antimony, as advised in lues venerea, or by camphor combined with the pulvis ipecacuanhæ compositus.

To answer the second indication of restoring the former vigour of the system, the patient should be put under a course of cinchona bark, with the mineral acids, chalybeates, and other tonics, as directed under the head of Dyspepsia. He should at the same time breathe a pure, temperate, and dry air; take such daily exercise as his strength will admit of, use a generous nutritive diet of fresh animal and vegetable food, and lead a life of great regularity and temperance.

It has been generally supposed that scorbutic patients require land air, and land recreations for their more speedy and effectual recovery. Dr. Trotter, in his Medicina Nautica, endeavours to controvert this opinion. His words are, "There is not at present an officer in the fleet that, in doing justice to either his people or his country, would prefer the cure out of a ship. Nay, there is often the most urgent necessity for keeping them on board till they acquire a certain degree of strength. In the very weak state a scorbutic patient cannot bear the external air, which has been long observed, and recently confirmed by five men dying in the boat belonging to the Prince of Wales ship of war, between the Downs and Deal hospital."

An instance is mentioned in Mons. Charpentier Cossigny's Voyage to Canton, of a German soldier, of twenty-eight years of age, who expired suddenly when the crew came in sight of the island of Roderigo, and who, although he had some slight symptoms of the scurvy, was not so ill as to be entered on the sick list. M. Cossigny observes, that he has seen other scorbutic patients on inspiring the land air lose all their strength, and die while they were carrying to the hospital. He conjectures that the density of the land air stifled the German soldier, his lungs having lost their elasticity, &c. Dr. Trotter's sentiments are corroborated by this gentleman's remarks.

In those painful affections of the skin, of the kind usually termed scorbutic eruptions, that arise often without any very obvious cause, that chiefly depend on the habit of body, and make their appearance at stated intervals in painful ulcerations of the skin, producing a discharge of lymph, and an abundant desquamation, a long-continued course of Cheltenham water is often attended with a very good effect. Where the disease is inveterate, it may be necessary to have recourse to alterative medicines, such as a combination

of mercury with antimony (see Herpes,) together with the decoctum ulmi, nitric acid, spruce-beer, &c., and a diet consisting chiefly of vegetables and milk. Sea-bathing will also be proper.

ICTERUS, OR JAUNDICE.

JAUNDICE is characterized by a yellowness of the skin, more especially observable in the tunica conjunctiva of the eyes, a bitter taste in the mouth, a sense of pain or uneasiness in the right hypochondrium, whitish or clay-coloured fæces, and the urine obscurely red, tinging things dipped into it of a yellowish colour.

It takes place most usually in consequence of an interrupted excretion of the bile, from an obstruction in the ductus communis choledochus, which occasions its passing again into the blood-vessels. In some cases it may, however, be owing to a redundant secretion of the bile.

The causes producing the first of these are, the presence of biliary calculi in the gall-bladder and in its ducts; inspissated bile; spasmodic constriction of the ducts themselves; and, lastly, the pressure made by tumours situated in adjacent parts: hence jaundice is often an attendant symptom on chronic inflammation or scirrhosity of the liver, pancreas, &c., and frequently likewise on pregnancy. The proximate cause of icterus is an absorption or regurgitation of the bile into the vascular system.

Chronic bilious affections are frequently brought on by drinking freely, but more particularly of spirituous liquors; hence they are often to be observed in the debauchee and the drinker of drams. They are likewise frequently met with in those who lead a sedentary life, and who indulge much in anxious thoughts.

A slight degree of jaundice often proceeds from a redundant secretion of the bile; and a bilious habit is therefore constitutional to some people, but more particularly to those who reside long in a warm climate.

By attending to the various circumstances and symptoms which present themselves, we shall in general be able to ascertain with much certainty the real nature of the cause which has given rise to the disease.

We may be assured, by the long continuance of the complaint, and by feeling the liver and other parts externally, whether or not it arises from any enlargement or tumour in this viscus, the pancreas, mesentery, or omentum.

Where passions of the mind induce the disease, without any hardness or enlargement of the liver or adjacent parts, and without any appearance of calculi in the fæces, or on dissection after death, we are naturally induced to conclude that the disorder was owing to a spasmodic affection of the biliary ducts.

Where gall-stones are lodged in the ducts, acute lancinating pains will be felt in the region of the parts, which will cease for a

time, and then return again; great irritation at the stomach and frequent vomiting will attend, and the patient will experience an aggravation of the pain after eating. A pain at the top of the shoulder or right arm is another diagnostic of concretions in the gall-bladder and ducts.

When calculi are passing through the common duct into the duodenum, the symptoms are not so obscure and uncertain as when lodged in the gall-bladder. Sometimes the attack is preceded by or accompanied with a sense of coldness in the back and lower extremities. The person is seized with a sudden violent pain exactly where the common duct enters the intestine. The pain is often so circumscribed, that the patient is apt to say he can cover the extent of it with a finger, and sometimes it shoots through the back, and extends up between the shoulders. Persons thus seized cannot endure a recumbent posture, but are obliged to sit up with the body bent forward, which seems to afford a slight mitigation of the pain. In most cases the stomach is so irritable that every thing is immediately rejected. Sometimes bile is brought up, but not always; neither is vomiting a constant attendant. The intestines are invariably constipated; indeed the whole canal appears to share in the spasmodic state induced on the duodenum by the irritating cause.

If the bile is completely obstructed in its passage into the intestine, the fæces will be of a light clay-colour, and the skin and eyes become yellow, from a regurgitation of the bile into the system. Although the pain is more exquisite than in hepatitis, and is sometimes accompanied with great disturbance in the general system, such as heat of the skin, quickness of the pulse, thirst, white tongue, high-coloured urine with a dark-coloured lateritious sediment, still inflammation seldom occurs. Sometimes the disorder continues several hours, and then a remission of pain ensues, either in consequence of the calculus entering the duodenum, or otherwise falling back into either of the ducts or gall-bladder. After an interval of some days, or perhaps weeks, the paroxysm possibly returns again, indicating that the obstructing cause has not been removed.

Biliary calculi are of various sizes, from a pea to that of a walnut, and in some cases are voided in a considerable number, being, like the gall, of a yellow brownish or green colour. They vary also with regard to their figure and hardness. Some are very rough and angular; at other times they are oval or round, and their surface smooth. Although these concretions have been generally found in the gall-bladder and ducts, yet they are sometimes met with in the pori biliarii and parenchyma or spongy and cellular substance of the liver.

The experiments made by Dr. Saunders on biliary calculi prove them to consist chiefly of a resinous matter with a little earth (apparently calcareous,) combined with the mineral and volatile alkali.

The jaundice comes on with languor, inactivity, loathing of food, flatulency, acidities in the stomach and bowels, and costiveness. As it advances in its progress, the skin and tunica conjunctiva of the eyes become tinged of a deep yellow; there is a bitter taste in the mouth, with frequent nausea and vomiting; the urine is very high-coloured, and tinges linen yellow; the stools are of a gray or clayey appearance, and a dull obtuse pain is felt in the right hypochondrium, which is much aggravated by pressure with the fingers. Where the pain is very acute, the pulse is apt to become hard and full, and other febrile symptoms to attend.

The disease, when of long continuance, and proceeding from a chronic affection of the liver or other neighbouring viscera, is often attended with anasarcous swellings, and sometimes with ascites. Petechiæ and maculæ sometimes appear in different parts of the body; the skin, before yellow, turns brown or livid; even passive hæmorrhages and ulcerations have broken out, and the disease has in some instances assumed the form of scurvy.

Where jaundice is recent, and occasioned by concretions obstructing the biliary ducts, it is probable that by using proper means we may be able to effect a cure; but where it is brought on by tumours of the neighbouring parts, or has arisen in consequence of other diseases, attended with symptoms of obstructed viscera, our endeavours, most likely, will not be crowned with success. Arising during a state of pregnancy, it is of little consequence, as it will cease on parturition. A gradual diminution of the sense of weight and oppression about the præcordia, a return of appetite and of the digestive powers, the stools becoming copious and easily procured, the urine being secreted in a larger quantity, and ceasing to tinge linen of a yellowish colour, are to be regarded as favourable circumstances. A violent pain in the hypochondrium or epigastrium, attended with a quick pulse, loss of strength and flesh, with anasarcous swellings of the extremities, chilliness, watchfulness, melancholy, or hiccup, denote great danger.

On opening the bodies of those who die of jaundice, the yellow tinge appears to pervade even the most interior part of the body; it is diffused throughout the whole of the cellular membrane, in the cartilages and bones; and even the substance of the brain is occasionally coloured by it. A diseased state of the liver, gall-bladder, or adjacent viscera, is usually to be met with. Calculi are sometimes found in the biliary ducts.

As jaundice occurs in almost every morbid condition of the liver, and as its occurrence evidently does not depend upon a specific morbid action of that organ, some physicians have been induced to consider it only as a symptomatic affection. Under the general appearance of jaundice, we ought therefore by a careful investigation to ascertain, as far as we are able, the real condition of the liver; for certainly such a discrimination must appear indispensably necessary, when it is considered that the mode of treat-

ment must be varied according to the cause by which such an appearance is induced.

The cure of the disease, unpromising as it may at times appear, is nevertheless to be attempted, first, by restoring the interrupted passage of the bile through the duct; secondly, by carrying it off by the intestines; and thirdly, by relieving the particular symptoms. Whether the passage of the bile is obstructed by biliary concretions or by spasmodic constriction of the ductus communis choledochus, the same plan nearly must be adopted.

Concretions, when of a large size, frequently excite, by their great distension of the biliary duct in their passage through it, not only acute pain, but very often a considerable degree of inflammation likewise. When this is the case, much fever is apt to attend. To guard against such consequences, it will therefore be advisable, in full plethoric habits, where the symptoms run high, to take away a quantity of blood proportionable to the state of the pulse, the severity of the pain, and the age of the patient.

Having adopted this step, we should next direct him to be put into a warm bath, in which he may be allowed to continue until some degree of fainting is excited; he is then to be removed to bed, and to take an opiate, which may be repeated every four or six hours until ease is procured; and as the stomach is generally so irritable during the attack, that every thing taken into it is immediately rejected, especially fluids, it will perhaps be the best way to administer it in a solid form, as that of a pill. Besides these means, we may advise the constant application of a bladder filled with warm water immediately over the region of the part which is most painful. Throwing up emollient clysters may serve as internal fomentations. Small nauseating doses of antimonials, or of the pulvis ipecacuanhæ compositus, together with a free use of diluting liquors, might probably afford some relief.

With the intention of pushing forward biliary concretions, vomiting has been much employed in jaundice. In recent cases, where we have no reason to suspect the concretion to be of any great magnitude, and where the pain is not acute, this remedy may be attended with a good effect, by compressing, during its operation, the distended gall-bladder and biliary vessels; but in cases attended with acute pain and a considerable degree of fever, by which we are made acquainted with the presence of inflammation, vomiting would certainly be very likely to prove injurious.

An interesting case of inflammation of the gall-bladder proceeding from biliary calculi and terminating in suppuration, which at length pointed externally, came under my observation some years back. The patient was a woman of about forty years of age, who for a considerable time had been severely afflicted with pain in the stomach, febrile heat, faintings, and a purging. After a month or so there arose a swelling near the navel, which upon being opened discharged a quantity of yellow matter for many days. The pain

becoming very acute in the tumour, the surgeon was induced to introduce his probe into the orifice of the wound, when to his astonishment he found a hard gritty substance at the bottom of it, which, upon being discharged a few days afterwards, proved to be a gall-stone of the size of a common nut. This was shortly succeeded by another, and in due time the woman's health was perfectly restored.

In many instances it seems probable that there is not much pain produced whilst a calculus of a moderate size is lodged in the gall-bladder, or even in the biliary ducts, until it arrives at that part where the common duct perforates the intestine; which opinion seems confirmed from cases reported by writers of the first respectability, where biliary calculi have been met with on dissection in the gall-bladder of persons who never were incommoded during their lifetime with any symptoms that indicated the presence of such a complaint.

Purgatives have been much used in the jaundice, not only with the view of obviating costiveness, but also with that of exciting the action of the biliary ducts by increasing that of the intestines. Some physicians have, however, judged them useful only where there is a costive state of the bowels; while others again assure us, that drastic purges, whose action is both brisk and of long continuance, have proved highly serviceable.

Regular stools, with a soluble state of the bowels, are certainly necessary to a person afflicted with the jaundice; and in more than one or two instances I have known it to be completely removed by a diarrhœa supervening of its own accord.

Where the disease proceeds either from calculi or from spasmodic stricture, it seems rational therefore to presume, that after having pursued the steps before recommended, we may make use of purgatives* with much advantage; and in these cases I have certainly experienced their beneficial effects very frequently: but

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* 1. ℞ Pulv. Rhei, ℈j.
Extract. Taraxici, ʒss.
Hydrargyr. Submur. gr. xij.
Syrup. q. s. M.
Fiant pilul. xxiv. Capiat ij. vel iij. horâ decubitûs.
Vel,
2. ℞ Hydrargyr. Submur. gr. v.
Pulv. Jalapæ, ʒss.
Mel. Optim. q. s. M.
ft. Bolus, pro re nata capiendus.
Vel,
3. ℞ Pilul. Aloes cum Myrrh. gr. xv.
Hydrargyr. Submuriat. gr. iv.

* 1. Take Powdered Rhubarb, one scruple.
Extract of Dandelion, half a drachm.
Submuriate of Mercury, twelve grains.
Syrup, a sufficiency.
Divide the mass into twenty-four pills, and take two or three at bed time.
Or,
2. Take Submuriate of Mercury, five grains.
Powder of Jalap, half a drachm.
Honey, a sufficiency to form a bolus, which may be taken occasionally.
Or,
3. Take Aloetic Pills with Myrrh, fifteen grains.
Submuriate of Mercury, four grains.

where jaundice arises in consequence of some chronic affection of the liver or other adjacent viscera, active purgatives would be likely to do harm, by inducing much debility. In instances of this nature we may substitute aperients, such as any of the neutral salts.

With the intention of dislodging biliary concretions, gentle exercise, but more particularly that of riding on horseback, together with frictions, have been much advised; and certainly will be very proper, except during the paroxysms. Electrical shocks passed through the liver in the course of the common duct, may likewise prove a good auxiliary in promoting the passage of the calculus.

The warm bath and anodynes, by their relaxing and antispasmodic powers, have proved highly useful in the jaundice, when proceeding either from calculi or spasmodic strictures; and therefore when either of these causes is suspected to have given rise to it, they should by no means be neglected.

When a biliary concretion remains stationary in spite of all our endeavours to dislodge it and promote its being voided by stool, we may attempt its solution, however unsuccessful or inadequate the means may prove.

Dr. Darwin* made experiments on some fragments of a bile-stone with weak spirit of marine salt, a solution of mild alkali, a solution of caustic alkali and oil of turpentine, without being able to dissolve them. After some time these were all put into boiling water, and then the oil of turpentine dissolved the fragments, but no alteration was produced upon those in the other fluids, except some little change of their colour. Upon putting some other fragments of the same bile-stone into sulphuric æther, they were quickly dissolved without additional heat. Dr. Darwin therefore asks, Whether æther, mixed with yolk of egg or honey, might not be given with advantage in bilious concretions?

We are informed† that a mixture of æther and spirit of turpentine is a remedy which has been employed by many practitioners on the Continent as a solvent of biliary concretions with the most decided success; but more particularly by Monsieur Durande, who affirms, that of late he has cured all whom he met with suffering from gall-stones. The plan adopted by him is, after having conti-

* See Zoonomia, vol. ii. p. 4. † See Soemmering de Concretione Bilis.

Syrup. Zingib. q. s. M.
Fiant pil. iv. pro dos.

Vel,

4. ℞ Gum. Scammon. Pulv. gr. v.—x.
Potassæ Supertartrat.
Pulv. Zingib. āā gr. xij.
ft. Pulvis pro dos.

Syrup of Ginger, a sufficiency.
Divide the mass into four pills for a dose.

Or,

4. Take Scammony reduced to Powder, from five to ten grains.
Supertartrate of Potass,
PowderedGinger, of each twelve grains.
Mix them for a dose.

nued the use of emollient and aperient remedies, to give his patients a mixture of three parts of sulphuric æther and two of spirit of turpentine, in the dose of two scruples or a drachm every morning; and upon this he directs them to take some emollient drink, such as milk-whey, veal-broth, &c. &c. We are told in the publication alluded to, that M. Durande has seen biliary concretions perfectly dissolved, and discharged by stool in the form of a yellow matter resembling peas by this method. As the remedy, however, is apt sometimes to occasion nausea and other distressing symptoms, it should be administered with due caution, lest the pain should be increased by it; and before having recourse to its aid, the proper steps for obviating inflammation ought assiduously to be adopted.

Should we discover that jaundice has arisen in consequence of an inflammatory affection of the liver, we must, at an early period, have recourse to the usual means for carrying it off by resolution; viz. by venesection, topical bleedings, the exhibition of cooling saline purgatives from time to time, and the application of a blister over the part, which ought to be renewed in a quick succession, if the disease does not soon abate—(see Acute Hepatitis;) but where these have either failed or been neglected, and it has proceeded on to a chronic state of enlargement and scirrhosity, pressing thereby on the biliary ducts, we must then resort to a use of mercury both externally and internally, as advised under the head of chronic inflammation of that viscus.

In cases of this nature, as well as in those of jaundice arising from biliary concretions, it has been much the practice to employ neutral salts,* together with alkalies,† soap, and other deob-

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* 5. ℞ Infus. Gentian. C. f. ℥jss.
Tinct. Cinchon. f. ℥ij.
Potassæ Tartrat. gr. xv.
Pulv. Rhei, gr. v. M.
ft. Haustus, mane, horâ meridianâ, et vespere sumendus.

† 6. ℞ Sodæ Subcarbonat. ℥ij.
Pulv. Cinchonæ, ℥j.
—— Rhei, ℥ss.
Mucilag. Gum. Acaciæ, q. s. M.
ft. Electuarium, cujus sumat nucis moschatæ quantitatem ter in die.

Vel,

7. ℞ Decoct. Cinchon. f. ℥x.
Tinct. Calumb. f. ℥ij.
Sodæ Subcarbonat. gr. xij. M.
ft. Haustus, mane, iterumque horâ meridianâ et vespere sumendus.

* 5. Take Compound Infusion of Gentian, one ounce and a half.
Tincture of Peruvian Bark, two drachms.
Tartrate of Potass, fifteen grains.
Powdered Rhubarb, five grains.
Mix them. This draught is to be taken morning, noon, and evening.

† 6. Take Subcarbonate of Soda, two drachms.
Powder of Peruvian Bark, one ounce.
—— Rhubarb, half a drachm.
Mucilage of Gum Acacia, a sufficiency to form an electuary, of which let the bulk of a nutmeg be taken thrice a day.

Or,

7. Take Decoction of Peruvian Bark, ten drachms.
Tincture of Calumba, two drachms.
Subcarbonate of Soda, twelve grains.
Mix them, and let this draught be taken every morning, again at noon, and in the evening.

struents.* Soap has indeed been looked upon as a kind of specific in jaundice, and has therefore been employed in considerable quantities. Hemlock has also been used, but most probably without any good effect. Combining it either with cinchona bark or mercury† might possibly make it more efficacious.

The symptoms which usually prove most distressing in this disease are, the pain in the epigastrium, sickness at the stomach, and costiveness.

The two former of these will generally be relieved by bleeding, the warm bath, fomentations applied to the part, the exhibition of emollient clysters, and opiates, as before advised. Where they fail, the application of a large blister may possibly be attended with a better effect. Should the nausea and vomiting continue in spite of these means, we may then give the saline medicine in the act of effervescence, or something of a cordial antispasmodic nature,‡ that may be likely to abate the irritation in the stomach.

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* 8. ℞ Gum. Ammoniac.
Sapon. Dur. āā ʒj.
Ol. Junip. ♏ v.
Syrup. Zingib. q. s. M.
Fiant pilulæ xxiv. quarum sumat iv. vel v. bis in die.

Vel,

9. ℞ Pulv. Rhei, ʒj.
—— Cinnam. C. ʒss.
Saponis Dur. ʒij.
Ol. Junip. ♏ v.
Syrup. Simpl. q. s. M.
ft. Massa, in pilulas l. dividenda, quarum iij. vel iv. sumat mane et nocte.

† 10. ℞ Extract. Cinchon.
——— Conii, āā ʒij.
Syrup. Zingib. q. s. M.
Fiant pilul. lx. sumat iij.—xij. in die.

Vel,

11. ℞ Pilul. Hydrargyri, ʒss.
Extract. Conii, ʒij. M.
Fiant pilul. l. quarum iij. sumat mane et nocte.

‡ 12. ℞ Confect. Aromat. ʒj.
Aq. Fontan. f. ʒvss.
Spirit. Pimentæ, f. ʒss.
—— Ammon. Aromatic. f. ʒss.
Tinct. Opii, ♏ xxv. M.
ft. Mistura, cujus capiat cochl. ij. vel iij. urgenti nauseâ.

* 8. Take Gum Ammoniac,
Hard Soap, of each one drachm.
Oil of Juniper, eight drops.
Syrup of Ginger, a sufficiency to form the mass, out of which make twenty-four pills, and let four or five be taken twice a day.

Or,

9. Take Powdered Rhubarb, one drachm.
Compound Powder of Cinnamon, half a drachm.
Hard Soap, two drachms.
Oil of Juniper, eight drops.
Common Syrup, a sufficiency.
Divide the whole into fifty pills, of which three or four are to be taken morning and night.

† 10. Take Extract of Peruvian Bark,
——— Hemlock, of each two drachms.
Syrup of Ginger, a sufficiency.
Let sixty pills be formed out of the mass, and from three to twelve be taken in the course of the day.

Or,

11. Take Mercurial Pills, half a drachm.
Extract of Hemlock, 2 drachms.
Mix them, and divide them into fifty pills, of which three may be taken morning and night.

‡ 12. Take Aromatic Confection, 1 drachm.
Pure Water, 5 ounces and a half.
Spirit of Pimenta, half an ounce.
Aromatic Spirit of Ammonia, half a drachm.
Tincture of Opium, forty drops.
Of this mixture let two or three tablespoonsful be taken when the nausea and sickness are urgent.

Costiveness is to be removed by gentle laxatives, such as are here advised.*

When the disease is of a chronic nature, and attended with anasarcous swellings, it will be proper to employ diuretics, as recommended under the head of Dropsy, strengthening the general system at the same time with astringent bitters, chalybeates, mineral waters, a nutritive generous diet, and gentle daily exercise, but more particularly on horseback. Moderate quantities of both soda and Seltzer waters will be proper.

In the progress of the disorder, it sometimes happens that a spontaneous diarrhœa arises, and prevents the future absorption of the bile into the mass of fluids. As long as it continues moderate, and induces no debility, it may be allowed to go on; but where it attacks with violence, or takes place in a constitution much injured and enfeebled, it should be checked by having recourse to the means advised under that particular head.

When a putrid disposition shows itself, this must be counteracted by proper antiseptics.—(See Scurvy.) In jaundice arising from a scirrhosity of the liver, we must adopt the steps recommended in chronic hepatitis.

A variety of other different remedies have been mentioned as possessing a good effect in jaundice, but many of them have been found on trial to be perfectly inert. Among the rest, raw eggs have been proposed as a solvent.

Dr. Darwin mentions the case of a gentleman between forty and fifty years of age, who had laboured under the jaundice about six weeks without pain, sickness, or fever, and had taken emetics, cathartics, mercurials, bitters, chalybeates, æther, &c., without

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* 13. ℞ Ol. Ricini, f. ℥ij.
Mucil. Gum. Acaciæ, f. ℥j.

Misceantur simul in mortario, et adde
Aq. Anethi, f. ℥j.
Tinct. Jalapæ, f. ℥iij. M.
Capiat dimidium pro re nata.

Vel,

14. ℞ Pulv. Jalapæ, ℈i.
Potassæ Supertart. ℈ij.

ft. Pulvis pro dos.

Vel,

15. ℞ Aloes Spicat. ℥jss.

Sapon. Venet. ℥j.
Potassæ Subcarbonat. ℥ss.

Syrup. Rhamni, q. s. M.

Fiant pilul. xxxvj. capiat iij. vel iv. horâ decubitûs.

* 13. Take Castor Oil, two ounces.
Mucilage of Gum Acacia, one ounce.
Mix them in a mortar, and add
Dill Water, one ounce.
Tincture of Jalap, 3 drachms.
Take the half for a dose as the occasion may require.

Or,

14. Take Powder of Jalap, one scruple.
Supertartrate of Potass, two scruples.
Mix them for a dose.

Or,

15. Take Soccotrine Aloes, one drachm and a half.
Hard Soap, one drachm.
Subcarbonate of Potass, half a drachm.
Syrup of Buckthorn, a sufficiency.
Let 36 pills be formed out of the mass, and three or four be taken at bed-time.

any apparent advantage. On a supposition that the obstruction of the bile might be owing to a paralysis or torpid action of the common bile-duct, and the stimulants taken into the stomach seeming to have no effect, he directed half a score of smart electric shocks, from a coated bottle which held about a quart, to be passed through the liver and along the course of the common gall-duct, as near as could be guessed, and on that very day the stools became yellow; the electric shocks being continued a few days more, the patient's skin became gradually clear. In cases where we have reason to suspect the obstruction of the bile to be owing to a torpid action of the bile-duct, and where other means have failed in promoting the desired intention, we should therefore make trial of electricity.

Jaundice which arises from simple obstruction of the gall-ducts, is often removed by the internal as well as external use of Bath waters.—The complicated diseases which are brought on by long residence in hot climates, affecting the secretion of bile, the functions of the stomach and alimentary canal, and which generally produce organic derangement in some part of the hepatic system, likewise receive much benefit from the Bath water, if used at a time when suppurative inflammation is not actually present. Whenever there is an increased heat of the skin and quickness of the pulse during the paroxysms excited by biliary concretions, these waters should not be taken until the acute symptoms subside.

Cheltenham water is another remedy which has been found of essential service in obstructions of the liver, and the other organs connected with the functions of the alimentary canal. Persons who have had their biliary organs injured by a long residence in warm climates, and who are suffering under the symptoms either of excess or deficiency of bile, and an irregularity in its secretion, receive remarkable benefit from a course of this water judiciously exhibited. Its use may be here continued even during a considerable degree of debility; and from the great determination to the bowels, it may be employed with advantage to check the incipient symptoms of dropsy and general anasarca, which so often proceed from an obstruction in the liver. In full sanguine habits, the water of the saline spring only should be drunk. Dr. Saunders recommends drinking it warm.* Cheltenham water, besides containing salts of a purgative nature, is likewise a chalybeate. The iron is suspended entirely by carbonic acid, of which gas the water contains about an eighth of its bulk.

A diet consisting chiefly of vegetables appears to be best calculated for persons labouring under jaundice, or in whom bilious concretions are apt to form.

Together with a use either of the Bath or Cheltenham waters, great advantage may be derived from regular and sufficient exer-

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* See his Treatise on Mineral Waters.

cise daily, particularly on horseback, as nothing will tend more to prevent the bile from stagnating and becoming inspissated, which it is apt to do in those persons who lead a studious or sedentary life.

CLASS IV.

LOCALES, OR LOCAL DISEASES.

AFFECTION of a part, not of the whole body, characterizes this Class.

ORDER I.

THE DYSÆSTHESIÆ.

DEPRIVATION or loss of some sense, from the fault of the external organ.

NYCTALOPIA, OR NIGHT BLINDNESS.

IN this disease the sight is perfectly clear and distinct in the day-time, but a total blindness takes place by night, from which occurrence it derives its name.

The disorder is peculiar to the inhabitants of tropical climates and the southern parts of Europe, being rarely, if ever, met with in cold countries; and has been supposed to proceed from torpor of the retina and optic nerves, which suffer so much from the strong reflected rays of the sun by day, as not to be susceptible of the faint or weak light which the night furnishes. It is a frequent concomitant to scurvy between the tropics. In some cases, it is symptomatic of derangement in the chylopoetic organs, but more particularly in the hepatic system.

It becomes apparent towards evening with a dimness of sight, which gradually increases as the night approaches; and the darker it gets, so much the more indistinct does vision become. It is in general unattended by any other symptom, except that perhaps a more than ordinary sense of fulness is now and then perceived in the fore-part of the head and over the eyes.

Nyctalopia seldom proves a disease of much importance, or of long duration; but, on the contrary, generally admits of an easy cure.

Evacuation, both by bleeding and purging, has been recommended by such writers as have taken notice of this disorder; but as it is supposed to depend upon a relaxed state of the optic nerves or paralyzed condition of the retina, these remedies appear to be

improper, and those we employ ought to be such as will strengthen the tone of the parts. With this view, the eyes should be washed several times a day, by means of an eye-cup, with cold water, or some gentle astringent collyrium ;* the patient at the same time wearing a green silk blind over his eyes, and avoiding all exposures to the sun or any great glare of light.

Blisters applied to the temples, tolerably close to the external canthus of the eye, and repeated several times, will expedite the cure, unless depending on scurvy, in which case they will have little effect until that complaint be removed.

If the internal use of any medicine is necessary in nyctalopia not dependent on scurvy, or on any derangement of the chylopoetic organs, but merely on a peculiar state of the optic nerves or retina, it is probable that the cinchona bark, joined with valerian and chalybeates, might be the most proper.

GUTTA SERENA, AMAUROSIS, OR DIMNESS OF SIGHT.

GUTTA SERENA (a species of blindness, wherein the eyes remain fair and seemingly unaffected) consists in a dimness of sight, whether the object be near or at a distance, together with the representation of flies, dust, &c., floating before the eyes, and the pupil is generally deprived of its power of contraction.

It is supposed to depend on some affection of the optic nerves ; but its causes are nevertheless said to be various ; some of which are, from their nature, incapable of being removed. Thus in one case the blindness has been found to be occasioned by an encysted tumour which was situated in the substance of the cerebrum, and pressed on the optic nerves near their origin ; in a second, by a cyst, containing a considerable quantity of water, and lodging itself on the optic nerves at the part where they unite ; in a third, by a caries of the os frontis occasioning an alteration in the optic foramina ; and in a fourth, by malformation of the optic nerves themselves.

In some cases the defect of vision has been attempted to be accounted for by supposing a defect in the optic nerves, disqualifying them for conveying the impression of objects through the eyes to the brain, as upon the minutest inspection by dissection nothing has been discovered either in the structure of the eyes, or in the state of any of the component parts contributing to the faculty of vision, which could at all obstruct the performance of their proper office.

Mr. Ware, in his Treatise on this disease, mentions, that a dilatation of the arterial circle surrounding the cella turcica (which is

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* 1. ℞ Zinc. Sulphat. gr. viij.—xv.
Aq. Rosæ, f. ℥iv. M.

* 1. Take Sulphate of Zinc, from eight to fifteen grains.
Rose Water, four ounces.
Mix them.

formed by the carotid arteries on each side, by branches passing from them to meet each other before, and by other branches passing backward to meet branches from the basilary artery behind,) may likewise be a cause of gutta serena. The anterior portion of this circle passes over the optic nerves, which undoubtedly may therefore become compressed when any enlargement of these vessels takes place.

A dilatation of the artery which passes directly through the centre of the optic nerve to the retina, may, it is presumed, likewise become a cause of defective vision. Mr. Stevenson* is inclined to attribute amaurosis to vascular congestion of the capillary vessels of the retina itself, the immediate seat of vision.

The proximate cause of amaurosis is generally allowed to be the insensibility of the retina. A late writer remarks,† it will be found that the cause of amaurosis are often those which are productive of increased determination of blood to the head, and to the eyes especially; and by a series of arguments, he shows that amaurotic blindness may be the consequence of direct inflammation of the retina or of the vascular structure on which it rests. But whilst he establishes this point, he takes care also to mention that it may in some cases arise from local debility, influenced by repletion of the system, obstructed circulation, and from actual loss of power from the natural decay of age, or protracted debility. He, however, considers that excepting when it occurs at a very advanced period of life, it is almost always formed out of some pre-existing disease.

Violent contusions of the head; apoplectic fits; sudden flashes of lightning; frequent exposure to the rays of the sun; severe exercise and strong passions, especially terror and anger; drunkenness; immoderate venery; and all those causes which predispose to nervous and paralytic affections, may give rise to amaurosis. An over-distension of the blood-vessels of the brain, or of the immediate organ, has sometimes been a cause of the disorder.

Gutta serena, although considerably relieved in some instances by appropriate remedies, proves generally an incurable disease.

Its treatment is usually regulated on the plan of stimulating either the parts themselves, or the system in general. The first is to be done by applying blisters and issues behind the ears or at the back of the neck, and continuing them for a considerable length of time; by promoting a discharge from the nose by means of errhines,‡ and by stimulant collyriums.

* See his Treatise on the Nature, Symptoms, and Treatment of Amaurosis.

† See Dr. Vetch's Practical Treatise on the Diseases of the Eye.

‡ 1. ℞ Pulv. Asari Composit. Pharmacop. Londinensis.

Vel,

2. ℞ Hydrargyr. Sulphat. gr. j.
Pulv. Glycirrhiz. gr. vj.
Pulv. Rad. Veratri, gr. ij. M.

‡ 1. Take Compound Powder of Asarabacca.

Or,

2. Take Sulphate of Mercury, one grain.
Powdered Liquorice, six grains.
Powdered White Hellebore Root, two grains.
Mix them, and use the powder as snuff.

Electricity has been employed in some cases with the happiest effect, when other remedies have failed, by passing very slight shocks through the forehead twice a day, and afterwards drawing sparks from the parts surrounding the eye or eyes; which plan ought to be persevered in for a proper length of time. Galvanism has likewise been resorted to with advantage. Dr. Darwin records* the case of a lady who laboured under gutta serena, and whose sight was restored by these means. He adopted the experiment of Volta, by employing two rods, one of them of zinc, about the size of a writing pencil, and the other of a silver pencil-case, about the same size; and by putting the end of the zinc rod in contact with the external corner of one eye, and the end of the silver pencil-case in contact with the external corner of the other eye, and then repeatedly making the other ends touch each other, sparks were visible in the eyes both at the time of the contact and at the time of separating the two rods. He mentions that she took valerian and calumba at the same time, and perfectly regained her sight in about three weeks.

Mr. Ware informs us, that in several instances of common gutta serena he observed considerable relief to be obtained by the use of a snuff composed of ten grains of turbith mineral, with about a drachm of the pulvis sternutatorius; or in the place of that, the glycirrhiza, or saccharum commune.

Stimulants have been applied immediately to the eyes, in some cases of gutta serena, with a good effect, but more particularly in those which seem to depend upon defective irritability of the optic nerve. In such cases, an infusion of dried capsicums in water, in the proportion of one grain to the ounce, may be made use of, dropping a few drops into the eyes morning and evening. The severity of the pain may be great at first from this application, but by perseverance it will be found to abate. The vapour arising from warm rectified spirit passed through a tube and received into the eyes, has sometimes produced a good effect.

Dr. Vetch, reasoning on the principles before stated, disapproves of stimulants, especially of galvanism and electricity, until the primary affection is first removed. When it proceeds from derangement in the stomach, he recommends antimonials in small doses, which he is accustomed to combine with the arnica montana.

To stimulate the system, it is customary to have recourse to mercury, which is to be used and to be continued until it produces some sensible effect. In that form of the disease which is accompanied with a contracted state of the pupil, and which has been produced, probably, by an internal ophthalmy, Mr. Ware is of opinion, that it may best be relieved by the use of the hydrargyrus oxymuriatus, a quarter of a grain for a dose.

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* See Zoonomia, vol. iii. class 1, 2, 3, 5.

Where the disease seems to arise from a dilatation of the anterior portion of the circulus arteriosus, as before mentioned, he thinks the cause may often be removed by topical bleeding, purging, blistering, &c.; but unfortunately we have no criterion to distinguish this from other causes: and this state of the parts can only be inferred from a plethoric habit of body in the patient.

In those cases which seem to depend upon a relaxation of the optic nerve, the means advised under the head of Nyctalopia may be proper.

We are informed by Dr. Richter, professor of medicine in the university of Gottingen, in a publication which bears the title of Medical and Surgical Observations, that he has lately restored to sight several patients who laboured under gutta serena. In all those cases, he thinks the cause of the disease seemed to be seated in the abdominal viscera; for he cured them all, he says, by means of medicines which remove obstruction in these viscera and evacuate. He affirms, that in this way he has not unfrequently performed a complete cure, in cases where he hardly expected it, and in some where the disease actually continued for several years.

After vomiting he recommends the pills mentioned below;* and he says, it is often necessary to persevere in the use of these remedies six or eight weeks before any amendment is perceived. A gradual increase of the dose is also requisite. A disappearance of the fiery sparks from before the eyes, and of the sensation of tension in their balls, are the first symptoms he observes of amendment which give reason to hope for success in the cure of gutta serena.

Costiveness should carefully be obviated in all cases of amaurosis.

The disease is almost universally admitted to consist in an impaired or total loss of sensibility of the nerve appropriated to the sense of vision, the tunics and humours of the organ retaining their natural transparency. Whatever causes are capable of deranging the function of the optic nerve, by acting directly on its origin in the brain, or its expanded termination in the retina, or, lastly, by its sympathy with some remote viscus, as the stomach, may become the exciting cause of amaurosis; but as these are

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* 3. ℞ Gum. Ammon.
—— Assafœtid.
Pulv. Rad. Valerian.
—— Summitat. Arnic.
Sapon. Venet. āā ʒij.

Antimon. Tartarizat. gr. xviij.

Syrup. q. s. M.
ft. Pilul. pond. gran. v. quarum iij. sumat ter in die.

* 3. Take Gum Ammoniac,
—— Assafœtida,
Powder of Valerian,
Tops of Leopard's Bane,
Venetian Soap, of each two drachms.
Tartarized Antimony, eighteen grains.
Syrup, a sufficiency to form the mass, out of which let pills of five grains each be formed, and of these three are to be taken thrice a day.

various, so must be the modes of treatment. Hence it follows, that to attempt the cure in all instances by stimulants and nervines, on the supposition that the disease arises from a weakness or torpor of the nerve, must be irrational as well as unavailing. When an over-distension of the blood-vessels is suspected to be the cause, active general and topical depletion will be the most proper means to obtain a restoration of sight. Some cases successfully treated in this way have lately been transmitted to the Medical Society of London.*

PARACUSIS, OR DEAFNESS.

DEAFNESS is occasioned by any thing that proves injurious to the ear, as loud noises from the firing of cannon, violent colds particularly affecting the head, inflammation or ulceration of the membrane, hard wax or other substances interrupting sounds; too great a dryness, or too much moisture in the parts; or by atony, debility, or paralysis of the auditory nerves. In some instances it ensues in consequence of preceding diseases, such as fever, syphilis, &c.; and in others it depends upon an original defect in the structure or formation of the ear. In the last instance the person is usually not only deaf but likewise dumb.

It is often difficult to remove deafness, but more especially where it prevails as a consequence of a wound, ulcer, or inflammation of the tympanum. Where it proceeds from malconformation it admits of no cure.

When deafness is occasioned by wax sticking in the ear, or by any defective or diseased actions of the glandulæ ceruminæ, a little of either of the remedies here† advised may be dropped into it; or be applied at the end of a small dossil of cotton every morning and night, previously syringing it with a little warm milk and water, or soap and water. If a thin acrid or fetid discharge accompanies the difficulty of hearing, it will be advisable to apply a small blister behind the ear, and render it perpetual by dressing it with unguentum cantharidis.

When the disease proceeds from cold particularly affecting the head, the patient should be careful to keep this warm by night; the effects of which may be increased by putting the feet into warm water previous to his getting into bed, and taking some

* See Mr. Stevenson's Oration before this Society, inserted in the Medico-Chirurgical Transactions for May, 1817.

† 1. ℞ Fellis Bovis, f. ʒiij
Balsam. Peruv. f. ʒj. M.

Vel,

2. ℞ Sodæ Muriatis, ʒj.

Aquæ Distillat. q. s. ad solutionem.

† 1. Take Ox-Gall, three drachms.
Balsam of Peru, one drachm.
Mix them.

Or,

2. Take Muriate of Soda, (sea salt,) one drachm.
Distilled Water, a sufficiency to dissolve the former.

proper diaphoretic. Indeed from whatever cause the disorder may originate, it will always be proper to keep the head warm.

If deafness seems to be owing to a debility of some part of the organ, or arises in consequence of any nervous affection, it is then to be removed by stimulants* dropped into the ear; by drawing sparks with an electrical machine; by galvanism, and by cold bathing. Æther dropped into the ears of some people who are deaf seems to possess a twofold effect; one, of dissolving the indurated wax; and the other, of stimulating the torpid organ: but it is liable to excite some degree of pain unless it be freed from the sulphuric acid, some of which arises along with it in distillation. To purify it from this it should be rectified from manganese.

In that particular species of deafness which depends on a defective energy of the auditory nerve, we are told by Mr. Wilkinson,† that galvanism is capable of effecting a cure. He observes, that this species of deafness is ascertainable by the common practice of placing a sonorous body in contact with the teeth. If the communication of sound should not be thus rendered more distinct, we may conclude that the defect originates in the nerve; seeing that, provided the deafness has been owing to any derangement of the other parts of the ear, the sound transmitted by the medium of the teeth through the connecting bony substance to the seat of hearing would have been distinctly perceived.

In several cases where the deafness seemed to have arisen from a relaxation of the membrana tympani, attended by a diminished secretion of cerumen, Mr. Wilkinson experienced good effects from the employment of galvanism, which not only induced a grateful warmth in the meatus, but also considerably augmented the secretion of wax.

Where the disease is the effect of fever, it usually goes off as the patient regains his strength.

To assist the hearing of persons who are deaf in a high degree, we may recommend the use of an ear-trumpet, vulgarly so called.

Tobacco-smoke is a remedy which has been employed in some cases of severe and long-continued deafness, but more particu-

† See his Elements of Galvanism.

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* 3. ℞ Ol. Amygdal. Dulc. ℥ss.
—Terebinth. ♏ xxvj.
Vel,
4. ℞ Ol. Olivæ ℥ss.
Liquor. Ammon. ♏ xx. M.
Vel,
5. ℞ Ol. Amygdal. ℥i.
Camphoræ, ℈i. Solve.
Vel,
6. ℞ Spirit. Æther. Sulph.

* 3. Take Oil of Sweet Almonds, half an ounce.
——Turpentine forty drops.
Or,
4. Take Olive Oil, half an ounce.
Solution of Ammonia, thirty drops.
Or,
5. Take Oil of Almonds, one ounce.
Camphor, one drachm.
Dissolve it.
Or,
6. Take Spirit of Sulphuric Æther.

larly by Mr. Grosvenor, of Oxford, surgeon, with great success and efficacy. The mode of using it is to fill the mouth with the smoke of the strongest tobacco, instantly to close the mouth and nose, and then for the person to make all possible effort as if he meant to force the smoke through the nose, which must be prevented by holding the nostrils very tight; this forces the smoke through the Eustachian tube into the ear. The efforts are to be repeated till one or both ears give a seeming crack, immediately on which the hearing returns. We are informed by Mr. Grosvenor,* who had been exceedingly deaf for a long time, that the first night he made trial of tobacco-smoke, after the third effort, the right (which was his best) ear gave a violent crack or pop, and to his great astonishment he immediately heard. He repeated the process every evening till the right ear regularly cracked, when the hearing always improved. After some evenings the left ear cracked also, and he now hears tolerably well with it: whereas before it was scarcely possible to make him hear, even with the assistance of a trumpet. He has found that as he continues the practice each evening it is longer before the effect takes place. In addition to deafness, Mr. Grosvenor, it appears, was troubled with an incessant noise in the head and ears, which he found to decrease as his hearing improved. Before using the tobacco-smoke he could not hear the clock strike the hours, whereas he now hears click it makes.

Mons. de Saissy, surgeon at Lyons, has been successful in some cases of deafness by making injections into the hollow of the tympanum through the Eustachian tube.

In that species of deafness which arises from an obstruction of the Eustachian tube, Sir Astley Cooper recommends the puncturing of the membrana tympani.† He was led to this operation by reflecting that as an aperture in this membrane did not appear to injure the power of the ear, and a small opening would be sufficient to admit a free passage of air to and from the tympanum, perhaps a substitute might be thus easily found for the Eustachian tube, and the membrane by such an aperture be restored to its natural functions. He observes, that there are several causes by which a closure of the Eustachian tube may be produced.

It may arise, first, from a common cold affecting the parts contiguous to the orifices of the tube, and thereby preventing the free passage of air into the tympanum. The deafness thus produced, however, is often only temporary; but the frequent recurrence of such attacks may produce a permanent enlargement of the tonsils, which by their pressure on the Eustachian tubes will occasion a constant deafness.

Secondly, The scarlet fever causes ulcers in the throat, which in

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* See Supplement to vol. lxxxiv. part i. of the Gentleman's Magazine.

† See Philosophical Transactions of the London Royal Society, for 1801.

healing frequently close the Eustachian tube, thereby producing lasting deafness.

Thirdly, A venereal ulcer in the fauces, by the cicatrix it produces, often occasions a closure of the Eustachian tube, causing a deafness which nothing but the operation here spoken of can relieve.

Fourthly, He has known the closure of the tube produced by an extravasation of blood in the cavity of the tympanum.

Lastly, He met with one instance of a stricture in the tube, which, although it did not entirely obstruct the passage of the air, yet rendered it extremely difficult. In this the gentleman who was the subject of the disease, in order to enable himself to hear, was under the necessity of forcing air from the mouth into the cavity of the tympanum, which pressed the membrana tympani towards the meatus; then by pressing gently on the ear, he forced out a part of the air, which the tympanum contained; thus giving the membrane liberty to vibrate, and producing an immediate increase in the power of hearing.

As the operation will not afford relief in any cases of deafness except such as arise from a closed Eustachian tube, Sir Astley Cooper is anxious that it should be performed in those only which are clearly of that description. The criteria by which he judges whether the tube is closed or open are the following:—

"First, If the person in whom it is suspected to be closed should feel, in blowing the nose violently, a swelling in the ear from the membrane being at that time forced outward, the tube is open; for when closed no sensation is produced.

"Secondly, The Eustachian tube may be closed, yet the beating of a watch may be heard if it be placed between the teeth or pressed against the side of the head; and if it cannot be heard when it rests upon the teeth, this operation cannot relieve, as the power of the auditory nerves must have been destroyed.

"Thirdly, It is right to inquire if the deafness was immediately preceded by any complaint in the throat.

"Lastly, In a closed Eustachian tube there is no noise in the head like that which is known to accompany nervous deafness. This species of deafness generally approaches in a gradual manner; the person hears better at one time than another; a cloudy day, a warm room, agitated spirits, or the operation of fear, produce a considerable diminution in the powers of the organ. In the open air the hearing is better than in a confined situation; in a noisy than in a quiet society; in a coach when it is in motion, than when it is still. A pulsation is often felt in the ear: a noise resembling sometimes the roaring of the sea, and others the ringing of distant bells, is heard. This deafness begins generally in a diminished secretion of the wax of the ear, which the patient attributes to some unusual exposure of the head to cold: and this continues as long as the disorder remains."

ORDER II.

DYSOREXIÆ.

False or defective appetite.

BULIMIA, or CANINE APPETITE.

This disease is the direct opposite of anorexia, as the patient is affected with an insatiable and almost perpetual desire of eating, in which if he is not indulged, he is apt to fall into fainting fits.

With its real causes we seem not to be very well acquainted. In some cases it has been supposed to proceed from morbid acid in the stomach; and in others from too great a sensibility or peculiar affection of its nervous coat. In most instances it ought, in my opinion, to be considered as depending more frequently on monstrosity than disease.

In the third volume of the Medical and Physical Journal* is reported an extraordinary and well-attested case of this nature in a French prisoner, who, in one day, consumed of

Raw cow's udder	4 lbs.
Raw beef - - - -	10
Candles - - - -	2
Total - - - -	16 lbs.

Besides five bottles of porter.

It appears from Dr. Cochrane's report of this case, as inspector and surgeon of the prison in Liverpool, where this cannibal was confined, that the fæces were by no means in proportion to the ingesta, and indeed seldom exceeded those of other men; and that with the ordinary allowance of drink, the quantity of urine was not more than a quart a day: neither was it more offensive than that of other men, but there was a constant propensity to exhalation from the surface of his body, and soon after his getting into bed he was usually attacked with such a profuse sweating as to oblige him to throw off his shirt. In this case it is therefore evident that the recrementitious parts of the aliment were evacuated principally by the skin; and the same may probably happen in most cases of bulimia.

Another singular case of voracious appetite has been reported to the National Institute by M. Percy, a surgeon in chief to the French army. A young man from the neighbourhood of Lyons, named Tarare, and who early in life belonged to a troop of stroll-

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* See page 209.

ing jugglers, accustomed himself to swallow flints, enormous quantities of broken victuals, baskets-ful of fruits, and even living animals. The most alarming symptoms endured in consequence were not sufficient to overcome this dangerous habit, which became at last an imperious necessity.

Enrolled at the commencement of the late war in one of the battalions of the army of the Rhine, he sought for the necessary supply of food around the moveable hospital. The refuse of the kitchen, the remains of the messes, the rejected matters, or corrupted meats, did not suffice him. He often disputed with the vilest animals their filthy and disgusting meal: he was perpetually in search of cats, dogs, and even serpents, which he devoured alive. He was obliged to be driven by force or threats of punishment from the dead room and the places where the blood drawn from the sick was deposited. It was in vain attempted to cure his ravenous appetite by giving him fat, acids, opium, and even pounded shells. The disappearance of a child of sixteen months old gave rise to horrible suspicions of him, and he fled. Five or six years afterwards he was admitted into the Infirmary of Versailles in a consumptive state, which succeeded to his enormous appetite. He soon after died.

M. Tessier, chief surgeon of the Infirmary, examined the body, notwithstanding that an abominable odour exhaled from it. The stomach was of an extraordinary capacity, the intestines were ulcerated and remarkably distended, and the gall-bladder was of a very large size.

Tarare was small in stature, flabby, and weak; his countenance had nothing ferocious in it. When he had fasted for a time, the skin of his belly could be almost wrapped round him; and when full he appeared as if dropsical. A thick vapour issued in torrents from his mouth; all his body smoked; the sweat flowed abundantly from his head; and, like all other voracious animals, he slept during the time of digestion.

A case of fever attended with inordinate appetite is recorded in the 5th volume of the Medical Transactions of the London College of Physicians. The patient was a young gentleman sixteen years of age, who with all the other symptoms of fever, attended at first with a powerful determination to the head, showed the usual want of appetite and dislike to food (owing to the deprivation of the powers of digestion attendant on almost all pyrexial diseases) until the fifth day, when the most insatiable craving for food came on, and continued during the whole period of the disease, which was extended to upwards of thirty days, with all the ordinary characteristics of typhus. The desire for food came on regularly with the paroxysm of fever, and continued unabated until that subsided, when he usually fell into a profound sleep. A remarkable circumstance in this case was, that the digestive powers of the stomach were equal to the supply of food, and by the aid of active purgatives six or seven copious stools were

daily procured, equal in bulk and consistence to those of a strong healthy adult.

When a ravenous appetite is occasioned by an acidity in the stomach, this ought to be corrected by an emetic, with the after-use of alkalies.

Where the power of the stomach in quickly dissolving, assimilating, and disposing of the aliment is so great as in the cases just mentioned, we probably may be able to allay its contractile force by oil, fat meats, opiates, and a free use of tobacco, which may both be chewed and smoked. The liquor potassæ administered in doses of about five-and-twenty or thirty drops in a little veal broth, and repeated twice or thrice a day, might probably have a good effect.

A medical friend has communicated a case of bulimia to me, which was cured by confining the patient to a diet consisting wholly of eggs boiled to a very hard consistence; and these he carried constantly about with him in order to satisfy his appetite whenever it became craving.

FUROR UTERINUS, OR NYMPHOMANIA.

THIS disease comes on with melancholy, lascivious casting about of the eyes, and frequent sighing; and, as it increases, the face becomes red and flushed, and the woman makes use of libidinous gestures and speeches, and shows an immoderate desire for coition.

It frequently arises either from inflammation of the pudenda, or from an acrimony in the fluids of the parts. In most instances it ought, in my opinion, to be considered as a high degree of hysteria, or as a species of madness.

When the disease is the consequence of local inflammation, we must resort to bleeding and cooling laxative medicines, together with refrigerants, such as nitre, and the topical application of sedative lotions.* Internally we may likewise employ camphor combined with opium,† or the extract of the belladonna. If these fail, small doses of the plumbi acetas may be tried.

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* 1. ℞ Aq. Distillat. f. ℥iv.
Liquor. Plumbi Subacet ♏ xvj.
Tinct. Opii Vinos. ♏ xxv. M.

Vel,

2. ℞ Liquor. Ammon. Acetatis,
Aquæ Distillat,
Spirit. Rectif. ää f. ℥ij.
Tinct. Opii Vinos. ♏ xxx. M.

† 3. ℞ Camphoræ, gr. vj.—xij.
Potassæ Nitrat. gr. x.

* 1. Take Distilled Water, four ounces.
Solution of Subacetate of Lead, twenty-four drops.
Vinous Tincture of Opium, forty drops.
Mix them.

Or,

2. Take Solution of Acetate of Ammonia,
Distilled Water,
Rectified Spirit, of each 2 ounces.
Vinous Tincture of Opium, forty-five drops.
Mix them.

† 3. Take Camphor, from 6 to 12 grains.
Nitrate of Potass, ten grains.

If it proceeds from acrid matter, the patient must drink plentifully of cooling demulcent liquors. Injections of the same nature may also be thrown up the vagina; the parts be washed with a sedative lotion as just advised, or be anointed with some soothing liniment;* and opium be administered in small and frequently repeated doses.

The diet is to be cooling and light, consisting principally of vegetables and milk; and every thing that might prove an additional stimulus should be avoided.

As the clitoris is the seat of pleasure during the act of coitus, nymphomania might possibly be cured by extirpating this organ. The following case, which is recorded by a French writer,† is much to the purpose. A young woman was so addicted to masturbation, that she was nearly exhausted by marasmus: sensible of the danger of her situation, yet not possessed of sufficient fortitude, or else irresistibly impelled by the pleasurable sensations to which she yielded, she could not command herself, and excited profuse emissions. Her parents took her to Professor Dubois, and, upon the authority of Levret, he thought it advisable to propose amputation of the clitoris, which the patient and her parents agreed to. The organ was removed with one stroke of a bistoury, and the bleeding prevented by an application of the cautery. The operation completely succeeded, and the patient was cured of her fatal habit, quickly recovering her health and strength.

DEFECTIVE APPETITES.

ANOREXIA, OR LOSS OF APPETITE.

A WANT of appetite and loathing of food is not usually an original affection, but prevails as a symptom of some other disease, such

† See Nosographie Chirurgicale, par Anthelme Richerand, M. D., &c.

Opii, gr. ss.
Confect. Rosæ, q. s. M.
ft. Bolus, ter quaterve die sumendus.

Vel,

4. ℞ Extract. Belladon. gr. i.—iss.
Misturæ Camph. f. ℥x. M.
ft. Haustus, bis terve in die sumendus.

* 5. ℞ Unguent. Cetacei,
Cerati Plumbi Acetatis, āā ℥ss. M.

Opium, half a grain.
Confection of Roses, a sufficiency to form a bolus, which may be taken three or four times a day.

Or,

4. Take Extract of Belladonna, from one grain to one and a half.
Camphor Mixture, ten drachms.
Mix them, and let this draught be taken twice or thrice a day.

* 5. Take Spermaceti Ointment,
Cerate of Acetate of Lead, of each half an ounce.
Mix them.

as dyspepsia, and is therefore to be obviated by aromatics, bitters, cinchona joined with sulphuric acid, chalybeates, &c., as advised under that head.

In spontaneous anorexy, where the stomach is loaded with bile or crudities, an emetic in the evening, with some kind of stomachic purgative the next morning, will seldom fail to effect a cure.

ANAPHRODISIA, OR IMPOTENCY.

In some cases this disease is owing to an original defect in the organs of generation: but it more usually arises either from topical weakness, brought on by excess in venery or onanism; or from great debility in the system, produced by severe evacuations, preceding diseases, or the want of nutritive food. In a few instances it may be occasioned probably by a want of sufficient confidence, or a degree of fear at the time of coition.

Where the disease proceeds from an original defect in the organs of generation, it will not be possible to effect a cure. When it depends upon some disease of the parts, this must be removed by the means which have been pointed out as most proper.

If it arises in consequence of general weakness, the system is to be strengthened by a generous nutritive diet; by cold bathing, both general and topical; by the cinchona bark, myrrh, chalybeates, and other tonics, as advised under the head of Dyspepsia. Stimulants, such as the tinctura cantharidis,* might likewise be of service if given in small doses.

Vel,

6. ℞ Zinci Sulphat.
Plumbi Acetatis, āā gr. xv.

Adipis Præparat. ℥ss.
Opii Pulv. ℈ss. M.

* 1. ℞ Pulv. Cantharid. gr. xviij.

Opii,
Camphoræ, āā gr. xxxvj.
Confect. Rosæ Caninæ, q. s. M.
Fiantpilulæ xxxvj Capiat j.—ij. omni nocte horâ decubitûs.

Vel,

2. ℞ Decoct. Cinchon. f. ℥j.

Tinct. Cinnam. C. f. ℥ij.

—— Cantharidis, ♏ xiij.—xx. M.

ft. Haustus, bis in die sumendus.

Or,

6. Take Sulphate of Zinc,
Acetate of Lead, of each fifteen grains.
Prepared Lard, half an ounce.
Opium, reduced to a fine powder, half a drachm.
Mix them.

* 1. Take Powder of Spanish Fly, eighteen grains.
Opium,
Camphor, of each thirty-six grains.
Confection of Dog Rose, a sufficiency to form the mass, out of which let thirty-six pills be made. From one to two may be taken every night on going to bed.

Or,

2. Take Decoction of Peruvian Bark, one ounce.
Compound Tincture of Cinnamon, two drachms.
Tincture of Spanish Fly, from twenty to thirty drops.
Mix them. This draught is to be taken twice a day.

ORDER III.

DYSCINESIÆ.

Obstructed or depraved motions, from fault in the organs.

STRABISMUS, or SQUINTING.

Squinting is generally owing to one eye being less perfect than the other, on which account the person endeavours to hide the defective eye in the shadow of the nose, that his vision by the other may not be confused. Sometimes the habit is acquired, and cannot afterwards be easily corrected.

Where squinting has not been confirmed by long habit, and one eye is not much worse than the other, we are told* the defect may often be obviated by making a child wear, for some hours every day, a piece of gauze stretched on a circle of whalebone over the best eye, in such a manner as to reduce the distinctness of the vision of this eye to a similar degree of imperfection with the other; or the better eye may be totally darkened by a tin cup covered with black silk for some hours daily, by which means it will be gradually weakened by the want of use, and the defective eye will be progressively strengthened by using it.

In most cases of strabismus we shall be enabled to afford essential relief by the simple process of binding up the sound eye every day for two or three hours, so as to oblige the patient to make use of the debilitated organ, and according as it is more or less indisposed, to keep the other more or less veiled, continuing the process until the diseased eye can fully and properly perform its functions.

ORDER IV.

APOCENOSES.

Unusual flux of blood or other humours, without pyrexia, or increased impetus of the fluids.

EPHIDROSIS, or IMMODERATE SWEATING.

This is equally a symptomatic affection, but it nevertheless sometimes prevails as an idiopathic disease, and then is commonly owing to general weakness and debility, accompanied with a preternatural determination to the surface of the body. It is generally to be met with in the last stage of pulmonary consumption.

* See Darwin's Zoonomia, vol. iii. class 1, 2, 4, 5.

The cure is to be effected by covering the body lightly with apparel and bed clothes; by keeping the chamber of a moderate temperature; by determining from the surface of the body, by means of diuretics and gentle laxatives; and, lastly, by strengthening the system by chalybeates and other tonic medicines, cold bathing, and the means advised under the head of Dyspepsia, avoiding at the same time too long an indulgence in bed, and a use of warm slops.

In the colliquative sweating which attends hectic fever and phthisis pulmonalis, the diluted sulphuric acid is much employed.

ENEURESIS, OR INCONTINENCY OF URINE.

THIS disease usually proceeds either from a relaxation or a paralytic affection of the sphincter of the bladder, induced by various debilitating causes, such as too free a use of spirituous liquors, masturbation, and excess in venery; or it arises from compression on the bladder, from a diseased state of the organ, or from some irritating substance contained in its cavity.

We are informed by a modern writer,* that the reason why children pass their urine in bed is owing to their sleeping on their back, for the occurrence never takes place but when the boy is in this position. The cure, he asserts, is therefore simple, by turning himself round. He should accustom himself to sleep upon his side or face: by so doing the ill habit will be broken and the urine not be passed, nor will he be excited to dream of making urine while he keeps this position. It is added, that when a child wets the bed it is in consequence of a dream, excited by irritation of the sensible spot a little behind and below the orifice of the bladder, by the urine resting there, and stretching the bladder. The remedy proposed merits the attention of parents, and those who superintend schools for boys.

Incontinency of urine is generally to be removed with facility in young persons; and all that will be requisite is to stimulate the neck of the bladder to a certain degree, which will be most easily accomplished by the application of a blister to the loins; or if that fails, to the perinæum, taking care to keep it discharging for some time, and occasionally dressing it with the unguentum cantharidis. The same treatment may be recommended where the complaint arises in the adult subject, induced by relaxation of the parts from excessive debauchery, or is the consequence of a slight paralytic affection. If blistering fails, a few drops of the tinctura cantharidis may be taken morning and night, assisted by topical cold bathing and electricity.

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* See Treatise on the Diseases of the Urethra, Vesica Urinaria, &c., by Mr. Chas. Bell.

External pressure applied in perinæo on a line parallel with the urethra, has in some cases of eneuresis arising from paralysis of the sphincter, effected a complete cure. A bandage might be so contrived as to answer this purpose, and would be of easy application.

When it is occasioned by an extraneous substance lodged in the bladder, such as a stone, we cannot effect a cure but by removing this.

As arising from pregnancy, it is only to be relieved by delivery: but possibly it may be palliated by confining the woman as much as possible to a horizontal posture.

To prevent in men the urine from galling and excoriating the parts, it will be necessary for the patient to wear some vessel adapted to the penis that will receive it as it drops; or he may employ a jugum penis, which will obviate its being evacuated involuntarily. Women may use a sponge so fastened as to absorb the moisture.

Incontinence of urine subjects the person afflicted with it to inconveniences which are extremely distressing: the clothes, always moistened and wet with urine, acquire at length so strong a smell as to become very offensive to himself, and particularly so to all those around him.

GONORRHŒA DORMIENTIUM, OR INVOLUNTARY EMISSION OF THE SEMEN.

An involuntary emission of semen during sleep sometimes proceeds from general debility, but is more usually the effect of a weakness of the seminal vessels in consequence either of excessive venery or onanism. In a few instances it may probably be occasioned by a repletion of these vessels.

The disease is often difficult to remove, and in many cases proves incurable.

Its cure, however, is to be attempted by the patient's abstaining from the remote causes depending upon his will; by a generous and nutritive diet; by cold-bathing, both local and general; by balsams;* by chalybeates,† the cinchona bark, and other astrin-

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* 1. ℞ Bals. Copaib. f. ʒij.
Vitel. Ovi. Misceantur in mortario marmor. et adde gradatim,
Aq. Fontan. f. ℥vss.
Tinct. Cinchon. f. ʒj.
Syrup. Althææ, f. ℥ss. M.
ft. Mist. cujus sumat cochl. ij. ter quaterve in die.

† 2. ℞ Gum. Myrrh.
Extract. Cinchon. ää ʒj.

* 1. Take Balsam of Copaiba, two drachms.
The yolk of an Egg.
Let them be well mixed in a marble mortar, and add gradually,
Pure Water, five ounces and a half.
Tincture of Peruvian Bark, one ounce.
Syrup of Marshmallow, half an ounce.
Of this mixture let two table-spoonsful be taken three or four times a day.

† 2. Take Gum Myrrh,
Extract of Peruvian Bark, of each one drachm.

gent bitters, as advised under the head of Dyspepsia; and by the application of a blister to the perinæum.

In preventing an involuntary discharge of semen, and obviating the debility of the parts, a use of Spa water has often proved very serviceable. It is a strongly acidulous chalybeate water, containing more iron, and especially more carbonic acid, than any we have in this country.

LEUCORRHŒA, FLUOR ALBUS, OR WHITES.

This disease is marked by the discharge of a thin white or yellow matter from the uterus and vagina, attended likewise with some degree of fœtor, smarting in making water, pains in the back and loins, anorexia, and atrophy. In some cases the discharge is of so acrid a nature, as to produce effects on those who are connected with the woman somewhat similar to venereal matter, giving rise to excoriations about the glans penis and præputium, and occasioning a weeping from the urethra.

To distinguish leucorrhœa from gonorrhœa, it will be very necessary to attend to the symptoms. In the latter the running is constant, but in a small quantity; there is much ardor urinæ, itching of the pudenda, swelling of the labia, increasing inclination to venery, and very frequently an enlargement of the glands in the groin; whereas in the former the discharge is irregular, comes away often in large lumps, and in considerable quantities, and is neither preceded by, nor accompanied with, any inflammatory affection of the pudenda.

Immoderate coition, injury done to the parts by difficult and tedious labours, frequent miscarriages, immoderate flowings of the menses, profuse evacuations, poor diet, an inactive and sedentary life, and other causes giving rise to general debility, or to a laxity of the parts more immediately concerned, and those which usually produce the whites; vulgarly so called, from the discharge being commonly of that colour.

Ferri Sulphat. ℥j.
Bals. Copaib. p. s. M.
ft. Massa in pilul. xl. distribuenda, quarum iv. sumat ter in die.

Vel.

3. ℞ Zinc. Sulphat. gr. xxiv.
Extract. Anthemidis, ℥ss.
—— Cinchon. ℥j.
Syrup. q. s. M.
Fiant pilul. xxiv. capiat j.–ij. mane et nocte quotidie.

——Sulphate of Iron, one scruple.
Balsam of Copaiba, a sufficiency to form the mass, which is to be divided into forty pills, of which four may be taken three times a day.

Or.

3. Take Sulphate of Zinc, twenty-four grains.
Extract of Chamomile, half a drachm.
—— Peruvian Bark, one drachm.
Syrup, a sufficiency. Mix them, and form them into twenty-four pills. Take one to two morning and night daily.

Fluor albus in some cases indicates that there is a disposition to disease in the uterus, or parts connected with it, especially where the quantity of discharge is very copious, and its quality highly acrimonious. By some the disorder has been considered as never arising from debility of the system, but as being always a primary affection of the uterus, or produced by a change in the structure, position, or actions of the neighbouring parts, such change being the effect of natural or morbid causes.* Delicate women with lax fibres, who remove from a cold climate to a warm one, are, however, to my knowledge, very apt to be attacked with it, without the parts having previously sustained any kind of injury.

The disease shows itself by an irregular discharge from the uterus and vagina, of a fluid, which in different women varies much in colour, being of a white, green, yellow, or brown hue. In the beginning it is, however, most usually white and pellucid, and in the progress of the complaint acquires the various discolorations, and different degrees of acrimony; from whence proceeds a slight smarting in making water. Besides the discharge, the patient is frequently afflicted with severe and constant pains in the back and loins, loss of strength, failure of appetite, pain in the stomach, dejection of spirits, paleness of the countenance, chilliness, and langour.

The sleep is disturbed by fearful dreams, and affords but little refreshment. The woman becomes pale and emaciated, her eyes are dull, and a flushing of the face is alternated by a ghastly paleness. In process of time the feet and ankles swell, palpitations and a difficulty of respiration are experienced; the mind is dejected, apprehensive, and occasionally affected with melancholy. Very frequently the functions of generation are greatly injured, and sterility is often the consequence thereof. Hysteria also, in a greater or less degree, is generally a concomitant of leucorrhœa; the urine is turbid, and the menstrual discharge is sometimes scanty, and even suppressed: at others, it is too copious, irregular, or attended with much pain.

The disease is seldom removed but by artificial means; and where these are long deferred, it proceeds to waste the constitution with accumulating mischief. Every symptom becomes highly aggravated, the eyelids and face swell, are bloated and disfigured, the body is wasted and debilitated; and hectic fever, with its doleful train, and dropsy in every form, supervene, and terminate a miserable existence. In some cases prolapsus uteri, and ulcerations, are to be met with.

Where leucorrhœa terminates in death, the internal surface of the uterus appears on dissection to be pale, flabby, and relaxed; and where organic affections have arisen, much the same appear-

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* See Observations on the Diseases of Females, by C. M. Clarke.

ances are to be met with as have been noticed under the head of Menorrhagia.

The proper indications of cure to be observed in a fluor albus seem to be, to increase the action of the absorbents of the uterus and vagina by restoring the tone of the parts; to correct the acrimony of the discharge, diminish its quantity, and alleviate other urgent and distressing symptoms; and, thirdly, to strengthen the system when the disease is complicated with general debility and relaxation.

The first of these intentions is to be effected by astringents administered by the mouth, and likewise thrown up into the vagina and uterus in the form of injections.* Alum, sulphate of zinc, gum kino, and catechu, are the astringents which are most employed as internal remedies; and these may be given either separately, or combined with some tonic, such as the cinchona, bitters, chalybeates, and the sulphuric acid, as advised below,† or recommended under the head of Menorrhagia; together with partial cold bathing, by sprinkling or sponging the loins and thighs with cold water, morning and night.

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* 1. ℞ Zinc. Sulphat. f. ʒj.
Plumbi Acet. gr. x.
Aq. Distillat. Oj. M.
ft. Inject.

Vel,

2. ℞ Decoct. Cort. Quercus, Oj.
Aluminis, ʒj. M.

Vel,

3. ℞ Gall. Contus. ℥ss.
Aq. Fervent. Oij. M.

† 4. ℞ Aluminis Pulv. ʒij.
Ras. Nuc. Mosch. ʒss.
Catechu Pulv. ʒj.
Pulv. Cinchon. ℥ss.
Syr. Zingib. q. s. M.
ft. Electuarium, cujus sumat quantitatem juglandis ter in die.

Vel,

5. ℞ Alum. Pulv. gr. x.
Catechu, gr. v.
Zinc. Sulphat. gr. j.
Confect. Rosæ, q. s. M.
ft. Bolus ter in die sumendus.

Vel,

6. ℞ Extract. Cinchonæ,
Gum. Kino, āā ʒj.
Aluminis, ʒss.
Ras. Nuc. Mosch. ℈j.
Syrup. Simp. q. s. M.
ft. Massa in pilul. xxxvj. divid. quarum iij. sumat bis terve in die ex cyatho liquoris calcis.

* 1. Take Sulphate of Zinc, one drachm.
Acetate of Lead, ten grains.
Distilled Water, one pint.
Mix them for an injection.

Or,

2. Take Decoction of Oak Bark, one pint.
Alum, one drachm.
Mix them.

Or,

3. Take Oak Gall, bruised, half an ounce.
Hot Water, two pints.

† 4. Take Alum, powdered, two drachms.
Raspings of Nutmeg, half a drachm.
Catechu, powdered, one drachm.
Powder of Peruvian Bark, half an ounce.
Syrup of Ginger, a sufficiency to form an electuary, of which let the bulk of a walnut be taken thrice a day.

Or,

5. Take Alum, pulverized, ten grains.
Catechu, five grains.
Sulphate of Zinc, one grain.
Confection of Roses, a sufficiency to form a bolus. This may be taken three times a day.

Or,

6. Take Extract of Puruvian Bark,
Gum Kino, of each a drachm.
Alum, half a drachm.
Raspings of Nutmeg, 1 scruple.
Syrup, a sufficiency to form the mass.
Divide this into thirty-six pills, and let three be taken twice or thrice a day, washing them down with a tea-cupful of lime-water.

Besides astringents, it has been usual to employ in this disease such stimulating medicines as are most commonly determined to the urinary passages, which from their vicinity to the uterus, have often been found to afford considerable relief. Turpentine and other balsams, such as bals. copaibæ, terebinthina Canadensis, with many more of like nature, have been used on the occasion.* The tinctura cantharidis has likewise been much administered with the same view; and indeed in several obstinate cases I have given it with much advantage. It may be joined with balsam copaiba† or some tonic.‡

The application of a blister to the sacrum has in some cases been attended with advantage.

Stimulating the intestines and rectum by giving small doses of rhubarb, or the pilulæ aloes cum myrrha, every night on going to

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* 7. Terebinth. Vulg. f. ℥ij.
Pulv. Cinchon. ℥vj.
—— Gentian. ℥ij.
Mel. Optim. ℥j. M.
ft. Electuarium: capiat magnitudinem nucis moschatæ pro dos. bis terve in die.

Vel,

8. ℞ Terebinth. Canadens. f. ℥ij.
Pulv. Rad. Rhei, ℥j.
—— Cinnam. C. ℥ss. M.
Fiant pilul. l. quarum ij. ad iij. sumat ægra bis in die.

Vel,

9. ℞ Zinc. Sulphat. ℥ss.
Pulv. Catechu, ℥ij.
Bals. Copaib. q. s. M.
ft. Pilul. xl. capiat ij. vel iij. mane et vespere.

† 10. ℞ Bals. Copaib. ℥ij.
Vitellum Ovi. Misceantur in mortario marmor. et adde gradatim,
Aq. Fontan. ℥vij.
Mellis Despum. ℥ss.
Tinct. Cantharidis, ℥j. M.
Capiat cochl. med. ij. ter in die.

‡ 11. ℞ Infus. Gentian. C. f. ℥j.
Tinct. Cinchon. f. ℥ij.
—— Cantharidis, gut. x.—xv. M.
ft. Haust. bis terve in die sumendus.

* 7. Take Common Turpentine, two drachms.
Powder of Peruvian Bark, six drachms.
———— Gentian, two drachms.
Honey, one ounce.
Make them into an electuary, and take the bulk of a nutmeg twice or thrice a day.

Or,

8. Take Canada Turpentine, two drachms.
Powder of Rhubarb, one drachm.
Compound Powder of Cinnamon, half a drachm.
Mix them together, and let fifty pills be formed out of the mass, of which the patient may take from two to three twice a day.

Or,

9. Take Sulphate of Zinc, half a dracm.
Powdered Catechu, two drachms.
Balsam of Copaiba, a sufficiency.
Form forty Pills, and let two or three be taken morning and evening.

† 10. Take Balsam of Copaiba, two drachms.
The Yolk of an Egg.
Let them be well mixed together in a marble mortar, and gradually add
Pure Water, seven ounces.
Clarified Honey, half an ounce.
Tincture of Spanish fly, one drachm.
Mix them, and take two dessert-spoonsful thrice a day.

‡ 11. Take Compound Infusion of Gentian, one ounce.
Tincture of Peruvian Bark, two drachms.
———— Spanish Fly, from fifteen drops to twenty-four.
Mix them. This draught may be taken three times a day.

bed, for a considerable length of time has likewise been found serviceable.

Gentle emetics have also been supposed to be of singular utility in fluor albus, not only by cleansing the stomach and bowels, and making a revulsion of the humours from the inferior part of the body, but likewise by their exciting all the powers of the constitution to a more vigorous action.

To answer the second intention, of correcting the acrimony of the discharge and lessening its quantity, a diligent attention must be paid to cleanliness by washing the parts frequently with cold water, or a little milk and water, and then throwing astringent injections up the vagina. These may consist of a strong infusion of green tea, or a solution of alum, or sulphate of zinc, in the proportion of a drachm of the latter to a pint of water, or the decoctum quercus, or infusum corticis granati. When there are excoriations either externally or internally, the liquor plumbi subacetatis, diluted sufficiently with water, may be employed as a wash.

Injecting frequently with the same in those cases when any of the symptoms of an inflammatory action are present, or where a cancerous state of the uterus is suspected, will be attended with considerable advantage.

The pains in the back and loins are to be relieved by enveloping them with the emplastrum picis compos. spread upon coarse linen or leather, and by avoiding a standing posture of long continuance, much walking, dancing, or other violent exertion.

Languor, debility, and faintings, are to be obviated by a generous nutritive diet, consisting of milk, with isinglass boiled up in it, blanc-mange, jellies, eggs, sago, gelatinous broths, and light meats, together with cordial medicines, but more particularly Port wine.

To strengthen the general system where the disease is complicated with universal debility, besides the restorative means just mentioned, we must have recourse to bitters of an astringent and stomachic nature, the cinchona bark, preparations of steel, the use of mineral waters, particularly the Bath waters, which is generally accompanied with surprising effects in this debilitating complaint; cold bathing both topical and general, and other tonics, as advised under the head of Dyspepsia.

Women that are afflicted with fluor albus should avoid all the remote causes of the disease, and by no means indulge in the use of tea and other warm slops of a relaxing nature: they should lie on a mattress in preference to a feather bed; they should avoid too free an indulgence in sensual gratification, and they should rise early, and take such daily exercise as their strength will admit, particularly on horseback. Where there is much langour, with a considerable degree of chilliness, it is probable that frictions with flannels might afford some relief. In winter they ought to wear a flannel shift or sliders.

ORDER V.

EPISCHESES.

Suppression of excretions.

OBSTIPATIO, or COSTIVENESS.

Costiveness is to be considered either as constitutional or symptomatic; but in general it prevails as the latter.

The word implies a retention of the excrement, accompanied with an unusual hardness and dryness of the evacuations, so as to render them difficult, and sometimes painful.

Sedentery persons are peculiarly liable to this complaint, especially those of a sanguineous and choleric temperament; or who are subject to hypochondriac affections, the gout, acute fevers, or a diseased state of the liver and spleen.

Costiveness is frequently occasioned by neglecting the usual times of going to stool, and checking the natural tendency to those salutary excretions; by an extraordinary heat of the body, and copious sweats; by receiving into the stomach a larger proportion of solid food than is proper for the quantity of fluids swallowed; by a free use of opium, and by taking food that is dry, heating, and difficult of digestion. Drinking freely and frequently of Port wine may likewise occasion costiveness.

With the defect of stools there sometimes exist nausea, want of appetite, flatulency, pains in the head, and a degree of febrile heat.

The disease is to be obviated by an attention to diet; by observing certain regular periods for soliciting motions; and where these fail, by having recourse to laxatives.

The diet of such as are of a costive habit ought to consist a good deal of vegetables and ripe fruits, and their ordinary drink of malt liquors.

With respect to the second object to be attended to, a habit of regularity should be endeavoured to be established by the person's going at a certain hour or hours each day, and making proper efforts at each period for promoting an evacuation. If a natural inclination arises at any time, this ought likewise to be encouraged.

The laxatives most proper for obviating costiveness are those which afford the least irritation,* but which will at the same time procure one or two motions daily.

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* 1. ℞ Potassæ Tartratis, ℥ss.
Mann. Optim. ℥ij.
Aq. Fervent. f. ℥iij.

* 1. Take Tartrate of Potass, half an ounce.
Manna, two drachms.
Hot Water, three ounces.

Persons of a costive habit of body, and particularly pregnant women, are very apt to make use of Anderson's pills, which are composed wholly of aloes, with a little oil of aniseed to prevent the griping effect of the former; and indeed these pills have acquired an extensive reputation. In phlegmatic constitutions they may indeed be used occasionally with some advantage possibly; but in pregnant women, or those of a bilious habit, where the bowels are naturally irritable, they cannot fail to do harm. Their operation is confined in a great measure to the lower part of the rectum, and they are thereby apt to induce piles. The use of every purgative medicine, moreover, creates a necessity for its repetition, and by this repetition the bowels lose their energy, their delicate nerves become torpid to the stimulus of the food and drink, and the secretions formed from them. A natural discharge of the contents of the bowels ought therefore to be solicited by those of a costive habit, in preference to the habitual use of any kind of purgative whatever.

In cases of obstinate costiveness, proceeding from a stricture in the rectum, as also in enteritis, a caution presents itself respecting active purgatives, which by irritating the intestine above the obstructed part when the obstructing matter is too large to pass the narrowed channel, must inevitably increase the mischief.

In those cases where inveterate costiveness has once taken place, and the usual simple remedies have proved abortive, carbon or charcoal divested of heat has been administered with some success. It is reported to have procured the desired relief in every instance.

Tinct. Jalapæ, f. ʒij. M.
Capiat dimidium pro dos.

Vel,

2. ℞ Infusi Sennæ Compos. f. ℥v.
Magnes. Sulph. ℥ss.

Syrup. Rhamni, f. ʒij. M.

Sumat ℥ij. pro dos. et repetatur post horas tres, si sit necessitas.

Vel,

3. ℞ Ol. Ricini, f. ʒvj. pro dos.

Vel,

4. ℞ Elect. Sennæ, ℥ij.
Potassæ Supertart. ʒij.

Pulv Jalapæ, ʒj.
Syrup. Zingib. q. s. M.
ft. Electuarium, cujus quantitatem juglandis horâ somni sumat.

Vel,

5. ℞ Pilul. Rhei Comp. gr. xv. in pilul. iij. pro dos. dividend.

Tincture of Jalap, two drachms.
Mix them, and let the half be taken for a dose.

Or,

2. Take Compound Infusion of Senna, five ounces.
Sulphate of Magnesia, half an ounce.
Syrup of Buckthorn, two drachms.
Mix them. Four table-spoonsful may be taken for a dose, and the same quantity be repeated in three hours if the bowels are not sufficiently moved.

Or,

3. Take Castor Oil, six drachms for a dose.

Or,

4. Take Electuary of Senna, two ounces.
Supertartrate of Potass, two drachms.
Powdered Jalap, one drachm.
Syrup of Ginger, a sufficiency to form an electuary, of which let the bulk of a walnut be taken occasionally at bed-time.

Or,

5. Take Compound Rhubarb Pills, fifteen grains, divided into three pills for a dose.

Three drachms of it finely levigated may be mixed with three ounces of the confectio sennæ, adding about two drachms of the carbonate of soda. Of this mixture, from half an ounce to one ounce may be taken, as circumstances require.

In some cases of very obstinate costiveness, where every variety of purgatives, both by the mouth and clyster, fomentations to the abdomen, the warm bath, and pure quicksilver, have failed, the oleum terebinthinæ has been known to remove the obstruction and act freely on the bowels. The oil extracted from the croton tiglium is a very active purgative, and may be tried when other medicines fail in cases of very constipated bowels. It may be given in the dose of two drops on a bit of sugar or crumb of bread, formed into a pill.

Dr. Hosack recommends the use of emetics in obstinate constipation of the bowels, with the view to remove not only the hepatic obstruction, which appears to him to lay the foundation of the disease, but by their febrifuge and antispasmodic operation to remove the fever, the inflammation, and constriction, which constitute some of the most distressing, as well as dangerous symptoms that attend a constipated state of the bowels. In a small tract published by him very lately on the use of emetics in this disease, he has recited some cases which were successfully treated by this class of medicines, after having resisted the means more usually employed.

Costiveness is frequently occasioned by a stricture or strictures in the rectum or some higher portion of the intestinal tube; there are few cases, however, of the former nature which will not yield to a proper use of the rectum bougie, applied in due time. They are made like the wax urethra bougie, or of sponge coated with wax, or they are tubes of elastic gum.

Another mode of distending the rectum is by the introduction of a gut of six or eight inches in length, which gut is afterwards to be filled slowly with some tepid fluid by means of a syringe. The distended gut answers the purpose of a bougie, and is particularly useful when we are desirous of distending the rectum fully without producing to the same extent a like effect on the anus.

To prevent any accumulation of fæcal matter in the intestines, and melt down into a fluid form what would not pass through the strictured part, gentle purgative medicines regularly taken, assisted occasionally by laxative clysters, will be highly proper.

ISCHURIA ET DYSURIA, OR A SUPPRESSION AND DIFFICULTY OF VOIDING URINE.

When there is a frequent desire of making water attended with much difficulty in voiding it, the complaint is called dysuria or strangury; and when there is a total suppression of urine, it is

known by the name of ischuria. Both ischuria and dysuria are distinguished into acute when arising in consequence of inflammation, and chronic when proceeding from any other cause, such as calculus, &c.

The causes which give rise to these diseases, are, an inflammation of the urethra, occasioned either by venereal sores or by a use of acrid injections, inflammation of the veru-montanum, Cowper's gland, prostate gland, bladder, or kidneys, considerable enlargements of the hæmorrhoidal veins, a lodgment of indurated fæces in the rectum, spasm at the neck of the bladder, exposure to cold, the absorption of cantharides applied externally or taken internally, excess in drinking either spirituous or vinous liquors, or particles of gravel sticking in the neck of the bladder, or lodging in the urethra, and thereby producing irritation. Gout, by being translated to the neck of the bladder, will sometimes occasion these complaints. In many instances the obstruction to the flow of urine is in a great measure owing to a diseased action of the muscles; in some of them it is entirely to be attributed to this cause.

A very frequent cause, however, of both dysuria and ischuria is, an enlargement or other diseased state of the prostate gland, a complaint with which men in advanced life are very apt to be afflicted. It is usually excited by full living of every kind, inebriety, indulging to excess with women, or producing frequent excitement in the seminal vessels by masturbation, severe attacks of gonorrhœa, a confined state of the bowels, and exposure to cold. Indeed, whatever increases the circulation of the blood in these parts beyond the healthy standard, may become a cause of inflammation in this gland, the blood vessels of which lose their tone in an advanced period of life.

From various dissections made by Sir Everard Home,* he is of opinion, that when the prostate gland becomes diseased, it is not its body or lateral portions which in general are principally enlarged, but its middle lobe, which gradually becoming of an increased size, presses inwards towards the cavity of the bladder in the form of a nipple, pushes the internal membrane of the bladder before it, obstructs the flow of urine, and gives rise to dysuria and tenesmus, with many constitutional symptoms.

Dissections, however, by other surgeons have demonstrated, and seemingly very satisfactorily, that the part projecting into the bladder, and forming the valve, is not the third lobe, but a more anterior part of the gland. It has also been ascertained, that whenever this valvular projection from the prostate takes place, and aptly denominated by Mr. Charles Bell† uvula vesicæ, the muscles of the ureters are enlarged, and will be found inserted at the root of the tumour.

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* See Philosophical Transactions for 1806, part i. art. 8th.
— Practical Observations on the Diseases of the Prostate Gland.
† See his Treatise on the Diseases of the Urethra, Vesica Urinaria, &c.

In dysuria there is a frequent inclination to make water, attended with a smarting pain, heat and difficulty in voiding it, together with a sense of fulness in the region of the bladder. The symptoms often vary, however, according to the cause which has given rise to it. If it proceeds from a calculus in the kidney or ureter, besides the affections mentioned, it will be accompanied with nausea, vomiting, and acute pains in the loins and region of the ureter and kidney of the side affected. When a stone in the bladder or gravel in the urethra is the cause, an acute pain will be felt at the end of the penis, particularly on voiding the last drops of urine, and the stream of water will either be divided into two, or be discharged in a twisted manner, not unlike a cork-screw. If an enlargement or scirrhus or the prostate gland has occasioned the suppression or difficulty of urine, a hard indolent tumour, unattended with any acute pain, may readily be felt in the perinæum, or by introducing the finger in ano.

Dysuria is seldom attended with much danger, unless by neglect it should terminate in a total obstruction. Ischuria may always be regarded as a dangerous complaint when it continues for any length of time, from the great distension of the bladder, and often consequent inflammation which ensue. In those cases where neither a bougie nor a catheter can be introduced, the event in all probability will be fatal, as few patients will submit to the only remaining means of drawing off the urine before a considerable degree of inflammation and tendency to gangrene have taken place.

When dysuria has arisen in consequence of the application of a blister, as sometimes happens, nothing more will be necessary than to direct the patient to drink plentifully of warm diluent liquors, such as a thin solution of gum. acaciæ, linseed-tea, marshmallow decoction, or barley-water. When it proceeds from any other cause and the symptoms are violent, besides the means just mentioned, flannel cloths wrung out in a warm decoction of emollient herbs, or a bladder filled with warm water, should be kept constantly applied over the region of the pubes ; and emollient clysters should be injected frequently, both with the view of acting as an internal fomentation, and of dislodging any indurated fæces that may be collected, and which by their pressure and stimulus will of themselves often produce a strangury, or difficulty of making urine.

In ischuria it will aways be advisable to guard against the taking place of any degree of inflammation, by drawing off from the arm a quantity of blood proportionable to the age and habit of the patient, at an early period of the complaint, besides having recourse to emollient fomentations and laxative clysters.

Where inflammation is supposed already to exist at the neck of the bladder or prostate gland, it will likewise be proper to make use of topical bleeding, by applying several leeches to the perinæum, and repeating the application according to circumstances.

If the suppression of urine does not give way to the means advised, the patient should be put into a warm hip-bath ; and having kept him in for about ten minutes or a quarter of an hour, he is then to be taken out, and the introduction of a metal catheter, or one of flexible gum (which is preferable,) to be attempted. Where an oval tube can be procured for the purpose of bathing him, it ought to be preferred, as then the introduction of the catheter may be attempted in the bath, and possibly with a more decisive effect. In some obstinate cases of ischuria, and where every endeavour to draw off the urine has failed, by placing the patient in a warm bath and bleeding him ad deliquium animi, the surgeon has sometimes been enabled to pass a catheter with the greatest ease imaginable.

In all cases it will be necessary to introduce the catheter with gentleness ; even a moderate force improperly directed is capable of injuring the urethra in such a manner as to render the operation almost impracticable ; and it must be obvious to every surgeon, that long-continued and violent attempts have a tendency to increase the inflamed state of the urethra ; but besides this, a laceration of its membranous parts is apt to arise so as to endanger the making of an artificial passage by the catheter.

In a suppression of urine proceeding from an enlarged or diseased state of the prostate gland, and where there is a fulness in the region of the bladder, with a turgidness of the parts, having premised copious bleeding, both general and topical, no time should be lost in introducing the catheter and drawing off the water. In doing this, three things are, however, to be attended to :—1st, To avoid bringing on spasms of the urethra ; 2dly To conduct the point of the instrument over the prominence at the neck of the bladder ; and, 3dly, To employ an instrument that is fitted to be retained in the bladder, should much difficulty have occurred in the introduction, as less disturbance is likely to arise from an instrument remaining therein, than will be produced by repeating the operation of introducing it, where any degree of violence is committed upon the parts.

The instrument should be soft and smooth, round at the point, and as large as the canal will easily admit, that it may more readily disengage itself at the turn into the bladder : the apertures in its side should be wide, to render them less liable to be clogged with mucus or blood, and it should be pliant, that it may adapt itself to the form of the parts, and give little disturbance while retained : another desirable property for it to possess, we are told by Sir Everard Home,* is a permanent curvature at the point, even to a greater degree than is usually given to the common silver catheter. The only instrument which possesses these requisites is the elastic gum catheter. To acquire a sufficient curvature, it should be kept upon an iron stilet of a proper shape.

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* See his Observations on the Diseases of the Prostate Gland.

In some cases of an enlargement of the lobes of the prostate gland, even a flexible gum catheter with a stilet cannot pass along the urethra on account of spasms; but by having given it a considerable curvature by its being kept a sufficient time upon a stilet, and then introducing it in a flexible state without the stilet, we shall succeed, and be able to draw off the water. Hard metallic instruments should never be employed in cases of diseased prostate when others will answer the purpose.

Sir Everard Home gives the following directions for passing the catheter in cases of diseased prostate. It should be introduced either towards the left or right side with the handle nearly in an horizontal line; and when it reaches the membranous part of the urethra, the handle should be gently and gradually brought towards the perpendicular line, the point all the time being kept in motion; and when it is nearly upright, the handle should be depressed. When the flexible catheter has no stilet, a good deal of dexterity is often required. If the catheter without the stilet cannot be made to pass, it ought to be tried with one, and if it is still prevented from going on, by introducing a finger into the rectum, and pressing upon the curved point of the catheter, we may give it a right direction, so as to guide it into the bladder. When necessary to introduce the finger in ano, a recumbent posture must be employed; but in other instances Sir Everard Home prefers the standing position.

Where there is inflammation, accompanied by inordinate irritation at the neck of the bladder, all straining to expel the urine should be avoided, and the organ be emptied every six hours by introducing the elastic gum catheter, and afterwards washing it out with a little tepid water, injected through the catheter by means of a gum-bottle properly fitted thereto. By so doing we shall soothe the irritability of the parts, by substituting tepid water for the acrid urine.* In the healthy state of the parts connected with the bladder, the surface is not susceptible of the stimulus from the urine, or in only due degree; but when inflammation occupies these parts, the acrid urine becomes a continual source of excitement. Besides, by thus injecting the bladder, the ropy mucus and purulent secretion, when there is any, are washed away, and that sort of tenesmus vesicæ caused by their presence, is much relieved.

In every instance of suppressed urine, whether arising from stricture, gravel, inflammation, an enlarged state of the prostate gland, or spasm, opiates will prove highly serviceable, and ought therefore to be administered not only by the mouth along with diuretics† of a mild or bland nature every four hours, but likewise

* See Mr. Charles Bell's Treatise on Diseases of the Urethra, Vesica Urinaria, &c.

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† 1. ℞ Mucilag. Gum. Acacia, f. ℥j.
Ol. Olivæ, f. ℥ij.

† 1. Take Mucilage of Gum Acacia, one ounce.
Olive Oil, two drachms.

in clysters repeated frequently.* The liquor potassæ in doses of from twenty to thirty drops joined with tinctura opii, the patient drinking freely of mucilaginous liquors, such as linseed tea, or barley water, in which a little gum acacia has been dissolved, is a very useful remedy in all cases of irritation at the neck of the bladder.

Injecting sweet oil, or even warm milk and water, frequently up the urethra, will often afford relief, especially if the suppression has been occasioned by a small piece of gravel which has stuck in the canal. Injecting tepid water into the bladder itself in similar cases by the apparatus before mentioned, will also afford great relief in such cases.

In both ischuria and dysuria, arising from gravel or a stone in the bladder, besides adopting this step, we should have recourse to the means advised expressly under these heads.

Making the patient stand on a cold stone floor, and applying snow or ice to the region of the pubes, have been known to remove a suppression of urine when other remedies have failed. Throwing a little cold water on the thighs has sometimes enabled the person to pass urine in a tolerable stream, although before suppressed.

When all these means prove unsuccessful, an enema of an infusion of tobacco† will often be attended with a powerful and

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Terantur simul in mortario, et adde

Spirit. Æther. Nitrici. f. ʒj.

Tinct. Opii, ♏ xv.

Aq. Fœnicul. ℥ss. M.
ft. Haustus.

Vel,

2. ℞ Potassæ Acetat. ϑj.
Aq. Fœnicul. ʒxj.
Tinct. Opii, ♏ x.
Syrup. Althææ, ʒij.

ft. Haustus.

* 3. ℞ Bals. Copaib. f. ʒij.
Vitel. Ovi, q. s. ad solut. et adde

Decoct. Malvæ Compos. f. ℥xj.

Ol. Ricini, f. ℥ss.
Tinct. Opii, ♏ xxx.—lv. M.

Pro enemate.

Vel,

4. ℞ Decoct. Amyli, ℥vj.

Ol. Olivæ, f. ℥ss.
Vini Opii, ♏ xxxv. M.
ft. Enema.

† 5. ℞ Tabaci, ʒss.—ʒj.

Let them be well mixed in a marble mortar, and then add
Spirit of Nitric Æther, one drachm.
Tincture of Opium, twenty-three drops.
Fennel Water, half an ounce.
Mix them for a draught.

Or,

2. Take Acetate of Potass, one scruple.
Fennel Water, eleven drachms.
Tincture of Opium, 15 drops.
Syrup of Marshmallow, two drachms.
Mix them for a draught.

* 3. Take Balsam of Copaiba, 2 drachms.
Yolk of an egg, a sufficiency.
Then add
Compound Decoction of Marshmallows, eleven ounces.
Castor Oil, half an ounce.
Tincture of Opium, from fifty to eighty drops.
Mix them for a clyster.

Or,

4. Take Thin Decoction of Starch, six ounces.
Olive Oil, half an ounce.
Wine of Opium, fifty drops.
Mix them for a clyster.

† 5. Take Common Tobacco, from half a drachm to one drachm.

decisive effect in cases arising from spasmodic affection, as I have experienced in several instances; the patients became faint and sick, the pulse sunk, a profuse perspiration broke out, and soon afterwards the urine flowed in a small stream. From the great depression of the powers of life which tobacco clysters are apt to occasion, (even to an alarming degree sometimes) due caution must be observed in repeating them. A bougie medicated with tobacco is reported by Dr. Shaw, of Philadelphia, to have been employed by him with great success in several cases of a retention of urine arising from stricture. In cases of retention arising from spasm combined with stricture, the injection of warm olive oil into the urethra has sometimes proved beneficial. The tinctura tabaci administered in doses of thirty drops twice or thrice a day in a tea-cupful of linseed tea has proved an excellent remedy in many cases of dysuria.

The tinctura ferri muriatis is a remedy which often proves efficacious in suppressions of urine arising from spasm; and should the tobacco clyster fail in producing the desired effect, it may be given in doses of ten drops, repeated every ten minutes, until some sensible effect is obtained. After six doses the urine usually flows freely. To the good effect of this medicine I can myself bear testimony, having tried it in some cases of spasmodic suppression with success.

In ischuria, particularly where it is of a chronic nature, camphor has been found a very valuable medicine, and may be given as advised below,* administering a dose of the oleum ricini now and then.

In morbid conditions of the bladder, in which a suppression of urine is apt to arise, and to recur frequently, the extract of hyoscyamus may prove a good medicine, beginning with doses of four or five grains, and so gradually increasing the quantity according to the degree of distress, and the effect produced. When a diseased condition of the bladder is supposed to be connected

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Aq. Fervent. f. ℥x. Col. post semihoram.
Pro enemate.

* 6. ℞ Camphor. gr. v.
Hydrargyr. Submuriat. gr. ss.—j.
Opii, gr. j.
Confect. Aurant. q. s. M.
ft. Bolus, bis in die sumendus.

Vel,

7. ℞ Camphoræ, gr. vj.—x. Solve in
Lactis Vaccinæ, f. ℥iss. et adde
Tinct. Opii, ♏ x. M.
ft. Haustus. Capiat tertiâ quâque horâ.

Warm Water, ten ounces.

After half an hour's infusion, strain off the liquor for a clyster.

* 6. Take Camphor, five grains.
Submuriate of Mercury, from half a grain to one grain.
Opium, one grain.
Confection of Orange, a sufficiency to form a bolus, which is to be taken twice a day.

Or,

7. Take Camphor, from six to ten grains,
Dissolve it in
Fresh Cow's Milk, one ounce and a half, and add
Tincture of Opium, fifteen drops.
Mix them. This draught may be taken every three hours.

with, or dependent on scrofula, possibly hemlock may be of some service; but to derive benefit from it in such cases it should be used in as large doses as possible. Gentle courses of mercury, conjoined with hemlock, have sometimes been beneficial in the like cases; but where, under a morbid condition of the bladder, the inflammation and irritation are great, and verging to a state of scirrhus or ulceration, mercury would certainly be injurious.—See Cystitis.

In desperate cases, where all the means which have been advised prove ineffectual, where no catheter can be passed, and where imminent danger is to be apprehended from the vast distension of the bladder, recourse should be had, before it is too late, to the operation of puncturing it with a trocar; and the mode of doing this now most generally adopted by surgeons is (I believe) through the rectum.

In the manner of thus operating, some little variation from the usual mode has been recommended by Mr. Charles Bell, with the view of avoiding the prostate gland, vesiculæ seminales, and vasa deferentia. He directs when the finger is introduced in ano, and a proper distinction made betwixt the membranous part of the urethra, the prostate, and the body of the bladder, then to introduce the trocar, not exactly in the centre and behind the prostate, but to one side of the latter. If the bladder be struck behind, and a little to one side of the prostate gland, the vasa deferentia will be thus distant from the wound; the vesiculæ seminales will also be avoided: and we have this further motive, he observes, that even if they were touched, the wounding them could be attended with no serious effect, while the division of the vas deferens would be equal to castration.

Those who are subject to attacks of dysuria or ischuria ought carefully to guard against all exposures to cold, and particularly getting wet in the feet; they should lead a temperate life, avoid all severe exercise, especially on horseback; and they should use every precaution against receiving any venereal taint. Those who are liable to a suppression or difficulty of urine, either from strictures or caruncles in the urethra, will act prudently in wearing a bougie for an hour or two every day.

In the first stage of an enlargement of the prostate gland, the best means to resort to are frequent bleedings from the perinæum by means of leeches, or from the loins by cupping, assisted by cooling purgatives from time to time, opiate clysters, and the use of a tepid hip-bath of 94 or 95 degrees of temperature once in the twenty-four hours. Quietness, abstinence, and all the other common means for allaying irritation, are to be employed at the same time On no account should bougies or catheters, particularly of the metallic kind, be introduced; since when done in the most adroit manner they cannot fail to produce some disturbance which the parts are not in a state to bear; and if an instrument is

unskilfully passed, it will increase the swelling, and probably bring on a complete retention of urine.

In a more advanced stage of the disease the treatment should consist in keeping the urine in a state of dilution by means of watery mucilaginous drinks, and washing out the bladder once or twice a day with about half a pint of tepid water, thrown in through an elastic gum catheter, having a bottle of the same composition affixed to it; the bowels opened by gentle aperients, the diseased parts soothed by suppositories* and clysters of warm water, administering at the same time medicines of the narcotic kind internally. Of these, opium, the compound powder of ipecacuanha, hemlock, and hyoscyamus, are most to be depended upon. A temporary relief may be experienced by a hip-bath of common salt water at a low temperature. The insertion of a seton or issue in perinæo might perhaps retard the progress of the complaint. The patient should abstain from every kind of food and liquor of a stimulant nature; he should carefully avoid horse exercise, or violent exertion of any kind, and he should sit on a chair with a cushion which is hollowed out in the centre; moreover, he never should retain his urine for any length of time so as to distend the bladder by an accumulation of this secretion.

Where ulceration takes place in the prostate gland, the case is marked by an increased secretion of very viscid mucus mixed with pus, and sometimes with blood; a frequent desire to make water, and more or less with a stinging pain at the neck of the bladder and glans penis. Ulceration of this gland is usually the consequence either of small irregular pieces of gravel escaping from the bladder, but entangling themselves just behind the verumontanum, so that the sharp points wound the membrane, and by degrees sink deeper into the substance of the gland, and become fixed in that situation; or of the incautious use of instruments, more especially of the metallic kind, in attempts to pass them into the bladder; or it ensues in consequence of the formation of an abscess in the substance of the gland.

Cases of ulceration in the prostate gland are truly deplorable, and all that can be done is to mitigate the sufferings of the patient by opium and other narcotics, &c., recommending him, at the same time, strictly to follow the plan already detailed.

Before I close the subject of Ischuria, let it proceed from what cause it may, I think it necessary to state that the proper distinction between this complaint and a retention of urine should always be made; the latter implying a defect of the ordinary secretion; the former, the urine being secreted, but cannot be voided; as

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* ℞. Opii, gr. iij.
Extract. Conii, gr. iv. M. ft. Pilula, in ano introducta.

* 8. Take Opium, three grains.
Extract of Hemlock, 4 grains. Make them into a pill, and insert it up the anus.

by confounding them together, or mistaking one for the other, much injury may arise.

AMENORRHŒA, OR INTERRUPTION OF THE MENSTRUAL FLUX.

AMENORRHŒA is to be considered as of two kinds; the one where the menses do not begin to flow about the period of life at which they generally appear; and the other where, after having made their appearance, they cease to return at their usual periods from other causes than conception. The term of retention has been applied to the former, and that of suppression to the latter.

Menstruation seems evidently to give a disposition to the female organs of generation to be acted upon by the male semen so as to fit them for impregnation, as women seldom, if ever, bear children before they have menstruated, and few or none ever become pregnant after the total cessation of this discharge. Whether or not the blood which should have passed off by menstruation contributes to the formation and nutriment of the fœtus in utero, is looked upon as a matter of doubt: that it does not, is the opinion most generally entertained.

An ingenious solution of the problem, Why nature should have doomed the human female to the menstrual discharge? has been offered by Mr. Abernethy.* It can only be solved, he remarks, by supposing that it relieves uterine irritation, and mitigates the extreme of sexual desire, thus enabling a woman to conform to the laws of morality, and the social compacts that are established between us.

In warm climates menstruation takes place at a much earlier period of life than in cold ones, as in the former it often makes its appearance at the age of ten or eleven years; whereas in the latter it is seldom to be observed before fifteen or sixteen. It also ceases much sooner with women who reside in warm climates than it does with those who are inhabitants of cold ones; as in the former, menstruation is not often to be observed after the age of forty; whereas in the latter it seldom stops before that of forty-five and is in many instances extended to fifty years.

Some women begin to menstruate without any previous indisposition; but with most of them the first appearance of the discharge is preceded by a swelling or enlargement of the breasts, together with a sense of fulness at the lower region of the belly, pains in the back and inferior extremities, and some slight hysteric affections, all of which cease as soon as the flow of blood takes place.

For the first two or three times of its appearing it is apt to be somewhat irregular, both as to the quantity of blood which is discharged and the period of its return; but after these it usually

* See his Physiological Lectures delivered before the Royal College of Surgeons in the year 1817.

observes stated times, and nearly the same quantity is lost at each visitation, unless some irregularity ensues.

To ascertain the quantum generally discharged with exactness is impossible, as this varies in different women, and greatly depends on the constitution. Those of a delicate habit and lax fibre have a more copious and a longer continued discharge than women of a robust constitution. In general, however, the menses continue to flow from four to six days, and the quantity of blood discharged is about five ounces.

Pregnant women, and those that suckle children, do not usually menstruate during such processes.

CHLOROSIS, OR RETENTION OF THE MENSES.

THE cause of this disease seems to be a want of power in the system, arising from weakness to propel the blood into the uterine vessels with a force sufficient to open their extremities, so as to allow of a discharge of blood from them; but the origin of the weakness which appears at this particular period of life we are wholly unacquainted with. Some have referred it to a certain state or affection of the ovaria, between which and the uterine vessels there is a seeming connexion.

The mere want of the discharge may not produce the disease, for frequently it does not appear until seventeen or nineteen years of age without producing any morbid affection. This is not to be considered as morbid unless the system is evidently deranged thereby. In many cases, however, morbid symptoms do appear, which are evidently connected with the defect of the menses, and go off upon its discharge.

The supposed connexion of chlorosis with defective menstruation as its cause, and with the restraints imposed by the laws of society on certain natural appetites and passions, has been combated by a late writer,* and he thinks that the leading symptoms may be readily explained by a reference to the state of the primæ viæ. Costiveness always precedes and accompanies the other symptoms. This induces, he says, the feculent odour of the breath, disordered stomach, depraved appetite, and impaired digestion, which preclude a sufficient supply of nourishment at a period of growth when it is most wanted.

In reporting this gentleman's ideas on the subject of chlorosis, I cannot avoid observing, at the same time, that since the publication of his work on the utility of purgative medicines, it has become too prevalent to attribute a long catalogue of diseases as consequential affections upon a disordered state of the digestive organs, or chylopoietic viscera; many of which, in my humble opinion, arise from other causes.

* See Observations on the Utility of Purgative Medicines in several Diseases, by Dr. James Hamilton of Edinburgh.

Heaviness, listlessness to motion, fatigue on the least exercise, palpitations at the heart, pains in the back, loins, and hips, flatulency, and acidities in the stomach and bowels, costiveness, a preternatural appetite for chalk, lime, and various other absorbents, together with many dyspeptic symptoms, usually attend on chlorosis.

As it advances in its progress the face becomes pale, and afterwards assumes a yellowish hue, even verging upon green, from whence it has been called green sickness; the lips lose their rosy colour; the eyes are encircled with a livid areola; the whole body has a leucophlegmatic appearance, with every indication of a want of power and energy in the constitution; the feet are affected with œdematous swellings; the breathing is much hurried by any vigorous exertion of the body; the pulse is quick, but small; and the person is apt to be affected with a cough, and with many of the symptoms of hysteria Sometimes a great quantity of pale urine is discharged in the morning, and not unfrequently hectic fever attends.

To procure a flow of the menses proves in some cases a very difficult matter; and where the disease has been of long standing, various morbid affections of the viscera are often brought on, which at length terminate fatally. By marriage, and a change in the mode of life, the disorder has in several instances been removed.

Dissections of those who have died of chlorosis, have usually shown the ovaria to be in a scirrhous or dropsical state. In some cases, the liver, spleen, and mesenteric glands have likewise been found in a diseased condition.

The cure of the disorder is to be regulated on the plan of increasing the tone of the general system, and of exciting the action of the uterine vessels by stimulants.

The first of these is to be effected by a generous nutritive diet, with a moderate use of wine; by gentle and daily exercise, but more particularly on horseback; by associating with agreeable company, so as to keep the attention engaged, and the mind tranquil and amused; by inhaling dephlogisticated air or oxygen gas; and by a regular use of tonic medicines, as the ci chona, infusum gentianæ compositum, infusum quassiæ, &c., together with chalybeates,* various forms of which will also be found under the head of Dyspepsia.

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* 1. ℞ Myrrh. Pulv. ʒss.
Ferri Sulphat. ℈j.
Sodæ Subcarbon. gr. xv.
Extract Cinchon. ℈j.
Syrup. Zingib. q. s. M.
ft. Massa, pilulas xxiv dividenda, quarum duas sumat bis terve de die cum cochl. mangis duobus misturæ sequentis :—

* 1. Take Powdered Myrrh, half a drachm.
Sulphate of Iron, one scruple.
Subcarbonate of Soda, fifteen grains.
Extract of Peruvian Bark, one scruple.
Syrup of Ginger, a sufficiency to form the mass, which is to be divided into twenty-four pills, and two to be taken twice or thrice a day, washing them down

Previous to a use of these medicines, it may, however, be advisable to give a gentle emetic, for the purpose of cleansing the stomach, and freeing it from acidities and inactive fluids.

Chlorosis (a disease which is at all times much relieved by steel, and will bear it even where there is a considerable degree of feverish irritation,) is often entirely removed by a course of Bath water; and its use as a bath and by pumping will greatly contribute to remove that languor of circulation, and obstruction of the natural evacuations, which constitute the leading features of this troublesome disorder. Women of an irritable habit should not, however, drink more than a pint a day. The benefit of the Bath waters is sometimes not quickly observed, but their action in uterine affections although slow, is nevertheless sure.

Tunbridge-well water is another chalybeate which frequently proves serviceable to chlorotic women. To those of a weak irritable stomach the fresh-drawn water is apt to prove too cold, and to occasion a nausea or sickness which always defeats the general intention of the medicine. This inconvenience is to be prevented by giving the water a tepid warmth; and to do this it is by far the best method to put it into a bottle closely corked, and to immerse the whole in hot water, for by this means but little of the carbonic acid escapes. During a course of this water, as well as of the former, it will be advisable to employ the warm bath occasionally, say twice or thrice a week, the propriety of which practice is proved by daily experience. A bath of about eighty degrees will be highly serviceable; a colder one might do injury. Cold bathing has been tried in chlorosis, but it has rarely been attended with success.

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2. ℞ Infus. Gentian. Comp. f. ℥vj.

Tinct. Cinchon. C.
—— Cardam. C. āā f. ℥ss. M.

ft. Mistura.

Vel,

3. ℞ Tinct. Ferri Muriatis, f. ℥j.

Cujus sumantur ♏ decem ter de die ex cyatho aquæ frigidæ aut Decocti Cinchonæ.

Vel,

4. ℞ Pulv. Myrrh. ℈j
Solve in
Spirit. Cinnam. f. ℥ij. et adde

Aq. Pimentæ, f. ℥x.
Ferri Sulphat. gr. v.
Potassæ Subcarbonat. gr. viij.

Syrup. Simpl. f. ℥j. M.

ft. Haustus, ter in die adhibendus.

with two table-spoonsful of the following mixture:—

2. Take Compound Infusion of Gentian, six ounces.
——— Tincture of Bark,
——————— Cardamoms,
of each half an ounce.

Mix them.

Or,

3. Take Tincture of Muriate of Iron, one ounce.

The dose may be fifteen drops thrice a day in a glassful of cold water or a Decoction of Peruvian Bark.

Or,

4. Take Myrrh, one scruple.
Dissolve it in
Spirit of Cinnamon, two drachms.
And add
Pimenta Water, ten drachms.
Sulphate of Iron, five grains.
Subcarbonate of Potass, eight grains.
Common Syrup, one drachm.

Mix them. This draught is to be taken thrice a day.

Pyrmont and Spa waters may likewise be found useful in this disease. As the former of these is very strong, and contains a large excess of carbonic acid, it will bear dilution with boiling water sufficient to bring the whole to a moderate temperature; but with the mild weak chalybeates, such as that of Tunbridge, the method of warming it in the manner before mentioned is by far the best. In using the Spa water, it will be most advisable to begin with a moderate quantity, not more than half a pint for a dose, which may be repeated three or four times in the day, and be gradually increased till some effect is produced on the secretions. Many patients, but more particularly those on the spot, are in the habit of diluting with this water the wine that forms their common drink, which makes a pleasant and salutary beverage.

The second intention of cure (viz. of exciting the action of the uterine vessels) is to be promoted by the exercises of walking, dancing, and jumping, by frequent friction, by putting the feet often into warm water, by heat applied to the organs of generation and lower region of the belly, in the form either of steam or stupes, by compression of the iliac arteries in obstinate cases, and by electric shocks passed through the pubic, hypogastric, and lumbar regions; the last of which, by being used at the same time, is more likely to be attended with a good effect. In all cases venery is, however, the most certain and natural remedy.

Stimulating the rectum by purgatives is a mean which is likewise usually employed in chlorosis to excite the action of the uterine vessels. Those most in use are the drastic resins, such as aloes, &c., which may be given as advised below.* Mercury is sometimes employed as a stimulant and deobstruent in this disease, and the preparation of it most used is the hydrargyri submurias; but it is by no means universally approved of as a safe medicine.—When given in cases of this nature it ought to be combined with some drastic.†

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* 5. ℞ Pilul. Aloes cum Myrrh. ʒj.

In pilulas xij. divid. quarum sumat iij. vel iv. pro dos.

Vel,

6. ℞ Pilul. Galban. C.
Aloes Spicat. āā ʒj.

Syr. Rhamni, q. s. M.

ft. Massa in pilulas xxiv. distribuenda, quarum iij vel iv. capiat horâ decubitûs.

Vel,

7. ℞ Tinct Aloes Comp. f. ʒij.—f. ℥ss. pro dos.

† 8. ℞ Pulv. Scammon. cum Hydrargyri Submuriate, ʒj.

* 5. Take Aloetic Pills with Myrrh, one drachm.

Divide the mass into twelve pills, of which take from three to four for a dose.

Or,

6. Take Compound Galbanum Pills,
Socotrine Aloes, of each one drachm.
Syrup of Buckthorn, a sufficiency.

The mass is to be divided into twenty-four pills, of which let from three to four be taken occasionally on going to bed.

Or,

7. Take Compound Tincture of Aloes, from two drachms to half an ounce for a dose.

† 8. Take Powder of Scammony, with Submuriate of Mercury, one drachm.

Some practitioners are in the habit of giving these stimulating purgatives twice a week; but the preferable way seems to be that of employing them in a small but sufficient dose every night when the patient retires to rest, so as to keep up a regular and sufficient alvine evacuation.

The author of the observation before quoted, tells us, that he has found the purgative plan very successful in chlorosis, but that it requires great assiduity and perseverance frequently to accomplish the end desired. The formation of this and many other diseases, he thinks, may be prevented wholly by promoting at all times, where nature is defective, a regular and sufficient alvine evacuation.

Besides purgatives, other stimulants, under the name of emmenagogues, such as savin, &c., have been employed in the cure of chlorosis; but they seem better calculated for a suppression of the menses than for a retention of them, as in this disease tonics and chalybeates are the most advisable. Should the practitioner, however, be disposed to make trial of them, he will find various forms of the same under the succeeding head.

If the desired effect is not produced by these remedies, we may, after a fair trial of them, recommend a teaspoonful of the medicines advised below,* to be taken morning, noon, and evening, giving now and then an emetic of the cupri sulphas, as prescribed under the head of Phthisis Pulmonalis.

Should the patient in the course of the disease be troubled with acidities in the stomach, she ought then to have recourse to absorbents, as directed in Dyspepsia.

The liquor potassæ subcarbonatis, in small doses, frequently repeated, is a good medicine for palliating cardialgic paroxysms in chlorotic constitutions.

Where chlorosis is attended with symptoms similar to pulmonary consumption, it will be of considerable utility to administer a gentle emetic occasionally, keeping the bowels open at the same time.

Syrup. q. s. M.
ft. Massa in pilul. xij. distribuenda, iij. pro dos sumendæ.

* 9. ℞ Tinct. Cinchonæ, f. ℥jss.
—— Ferri Muriat. f. ℥j.
—— Cantharidis, f. ℥ss. M.

Vel,

10. ℞ Tinct. Aloes, C. f. ℥jss.
—— Helleb. Nigr.
—— Castor. ää f. ℥ij.
—— Cantharidis, f. ℥ss. M.

Syrup, a sufficiency to form the mass, which is to be distributed into twelve pills. Of these three may be taken for a dose.

* 9. Take Tincture of Peruvian Bark, one ounce and a half.
———— Muriate of Iron, one drachm.
———— Spanish Fly, half a drachm.
Mix them.

Or,

10. Take Compound Tincture of Aloes, one ounce and a half.
Tincture of Black Hellebore,
———— Castor, of each two drachms.
———— Spanish Fly, half a drachm.
Mix them.

Myrrh combined with the sulphate of iron may also prove of much service. If there is pain in the side, the application of a blister over the part, or some warm plaster, will be proper; and if the cough be troublesome, squills may be used as an expectorant, with an opiate at bed-time. If the skin be permanently hot, or irregularly hot and cold, without any weakening perspiration, a tepid bath may be of some service, or we may substitute small doses of the saline julep from time to time. In such cases emmenagogues would be of no use; nay, they might be detrimental. A removal into the country, with pure air and moderate exercise on horseback, will greatly contribute to a re-establishment of the woman's health. The diet ought to be light and nourishing. In many instances milk agrees well with the patient; but it is not necessary to restrict her from animal food of easy digestion. In the winter she should be removed to the southern part of our island, or to a milder climate, and wear flannel next to her body.

A SUPPRESSION OF THE MENSES.

ANY interruption occurring after the menstrual flux has once been established in its regular course, except when occasioned by conception, is always to be considered as a case of suppression.

A constriction of the extremities of the vessels of the uterus arising from accidental circumstances, such as cold, anxiety of mind, fear, inactivity of body, the frequent use of acids and other sedatives, &c., is the cause which evidently produces a suppression of the menses. In some few cases it appears as a symptom of other diseases, and particularly of general debility in the system. Herein there is a want of the necessary propelling force or due action of the vessels.

When the menstrual flux has been suppressed for any considerable length of time, it not unfrequently happens that the blood which should have passed off by the uterus, being determined more copiously and forcibly to other parts, gives rise to hæmorrhages; hence it is frequently poured out from the nose, stomach, lungs, and other parts, in such cases. At first, however, febrile or inflammatory symptoms appear, the pulse is hard and frequent, the skin hot, and there is a severe pain in the head, back, and loins. Besides being subject to these occurrences, the patient is likewise much troubled with costiveness, colic pains, and dyspeptic and hysteric symptoms.

Our prognostic in this disease is to be directed by the cause which has given rise to it, the length of time it has continued, and the state of the person's health in other respects. When menstruation is suddenly suppressed, in consequence of cold, it may easily be restored by pursuing proper means; but where the suppression has been of long standing, and leucorrhœa attends, we ought always to consider such circumstances as unfavourable.

In those cases which have terminated fatally in consequence of

the long continuance of the disease, the same morbid changes in the ovaria and uterus are to be observed, on dissection, as in those of a retention of the menses.

Every attentive practitioner must know, that if there be cases of suppressed or obstructed menstruation where the fluid is tardily secreted from local or general debility, there are many others in which an opposite state of the woman's frame becomes the cause of such irregularities. It will, therefore, be highly necessary in the treatment of these complaints, that the morbid peculiarities, and habits of life of the patient, be taken into consideration; let the first be counteracted, the second be improved, let the sanguine have her excess of fulness diminished, let the debilitated have her powers augmented. In short, let the general health be amended, and the functions dependent thereon will, in all probability, be restored.

Luxurious living, coupled with an inactive life, often induces obstructed menstruation, the supply of food being greater than the wear and tear of the system, thereby producing a plethoric and unhealthy state. Here abstemiousness with an increase of exercise is the natural remedy; but should it fail in producing the desired effect, moderate bleedings, with saline purgatives occasionally, must be resorted to.

The application of cold and other accidental circumstances may also occasion an interruption of the menstrual discharge, by exciting fever in the system. In this case, confine the patient to bed, supply her with cooling drinks, open her bowels freely, and if medicine appears really necessary, give her the saline medicine combined with small doses of tartarized antimony. We may at the same time endeavour to remove (if possible) the constriction which affects the extremities of the vessels of the uterus; and this is to be attempted by a use of relaxants externally employed.

As such, bladders filled with warm water may be applied to the region of the pubes and adjacent parts, or warm vapours may be received on them, by making the patient sit on a chamber-pan filled with hot water; and in order that these applications may have the due effect, they should be employed particularly at the time when nature seems to be making some effort to produce the discharge, which may be known by a sense of fulness in the organs of generation, a weight in the back and loins, and slight spasmodic pains in the uterus. Pediluvia and semicupium will also be proper. The warm bath, aided by friction and pumping on the loins, will seldom fail in affording great relief.

To increase the relaxing powers of the topical applications, we may at the same time give an opiate in the form of clyster, where there is much pain.

Should poverty of living, close confinement within door, or breathing an impure air, have injured the patient's general health, and thereby induced debility and an obstruction of the menstrual discharge, then it will be necessary to invigorate the body by every means in our power. The stomach and digestive organs

must be strengthened by light nutritive food and by aromatic bitters, proceeding gradually to the use of more powerful tonics, such as bark and steel.

When the constitutional weakness has been removed by these means, we may then have recourse to stimulants, such as spices, essential oils, ammonia and wine, some of the resinous gums, castor, savin, black hellebore, Spanish fly, electricity, and horse exercise. The tinctura cantharidis may be tried if neither the savin or hellebore produce the desired effect, beginning at first with ten drops for a dose, and repeated twice a day (increasing it gradually to twenty or thirty), in an infusion of gentian, or calumba. Aloes, by stimulating the rectum, and being conjoined with galbanum, is likely to produce a good effect, and may be considered as far preferable to saline or oily purgatives.

Medicines which increase the general action of the system, (as those above enumerated are supposed to do,) have been denominated emmenagogues, and may be administered in the forms* here recommended.

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* 1. ℞. Tinct. Sabin. Compos. ℥j.

—— Helleb Nigr. ℥ss.

—— Castor. ℥ij. M.

Capiat ♏ xx.—xxx.ter die ex quovis vehiculo.

Vel,

2. ℞. Tinct. Helleb. Nig. f. ℥ss.

—— Myrrh. f. ℥j.

Sumat ægra ♏ xx. ter quaterve in die.

Vel,

3. ℞ Tinct. Aloes Comp. f. ℥ss.

—— Castor. f. ℥ij.

Vini Ferri. f, ℥ss. M.

Cochl. minim. j. ter die sumendum.

Vel,

4. ℞ Pulv Myrrh. Compos. ℈j.

Ferri Ammoniati, gr. v.

Confect. Cort. Aurant. q. s. M.

ft. Bolus, bis terve in die capiendus.

Vel.

5. ℞ Pilul Galban. C.

Ferri Sulphat. ää ℥j.

Extract. Sabin ℈ss.

——— Helleb. Nigr ℈j.

Syrup. Zingib. q. s. M.

ft. Massa in pilulas xxxvj. distribuenda, quarum iij. sumat ægra maneet vespere.

Vel,

6. ℞ Ferri Subcarbonat.

* 1. Take Compound Tincture of Savin, one ounce.

Tincture of Black Hellebore, half an ounce.

——— Castor, two drachms.

Mix them. The dose may be from thirty to forty-five drops thrice a day, in anyvehicle.

Or,

2. Take Tincture of Black Hellebore, half an ounce.

——— Myrrh, one ounce.

Mix them, and let the patient take thirty drops three or four times a day.

Or,

3. Take Compound Tincture of Aloes, half an ounce.

Tincture of Castor, two drachms.

Wine of Iron, half an ounce.

Mix them. Take a tea spoonful thriceaday.

Or,

4. Take Compound Powder of Myrrh, one scruple.

Ammoniated Iron, five grains.

Confection of Orange Peel, a sufficiency to form a bolus, which is to be taken twice or thrice a day.

Or,

5. Take Compound Galbanum Pills, Sulphate of Iron, of each one drachm.

Extract of Savin, half a scruple.

——— Black Hellebore, one scruple.

Syrup of Ginger, a sufficiency.

Mix them, and form thirty-six pills out of the mass. Let the patient take three morning and evening.

Or,

6. Take Subcarbonate of Iron.

Women subject to, or labouring under a suppression of the menses, should carefully avoid all exposures to wet and cold, particularly in the feet, which parts ought to be kept not only dry but warm.

Practitioners should be aware of the connexion between a suppression of this secretion and pregnancy.

DYSMENORRHŒA, OR DIFFICULT MENSTRUATION.

BESIDES the two deviations from the usual course of nature already mentioned, there sometimes occurs a third, viz. where menstruation, although not wholly suppressed, is nevertheless somewhat difficult, and accompanied with severe pains in the back, loins, and bottom of the belly.

This disease is supposed to be owing to a weak action of the vessels of the uterus, or spasm of its extreme vessels, and is to be obviated by chalybeates, warm bathing, both topical and general, together with the use of opiates, which should be employed as soon as the symptoms that denote its approach are apparent. The extractum stramonii given in half grain doses, will sometimes prove serviceable in cases of painful menstruation, when other narcotics and anodynes fail.

OF A CESSATION OF THE MENSES.

THE period of life at which menstruation ceases is always a very critical one to women, as the constitution then undergoes a very considerable change; and it not unfrequently happens, that chronic complaints then arise which create much disturbance, and after a time terminatei fatally, if not counteracted.

The menses seldom cease all at once, but for some time before their stoppage become somewhat irregular, both as to the periods and the quantity.

When they happen to disappear suddenly in women of a full plethoric habit, such persons should be careful to confine themselves to a more spare diet than usual; they should likewise take regular exercise, and keep their body open by a use of some mild laxative, such as the confectio sennæ, the purgative quality of

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Pulv. Myrrh. āā ℥j.	Myrrh, in powder, of each one drachm.
Aloes Spicatæ Extract, ℈ij.	Socotrine Aloes, two scruples.
Sapon. Venet ℈ss.	Venetian Soap, half a scruple.
Syrup. q. s. M	Syrup, a sufficiency.
Fiant pilul. xxxvj. capiat iij. bis terve in die.	Mix them. Let thirty-six pills be formed out of the mass, and take three twice or thrice a day.

which may be increased, if not found sufficiently powerful, by adding a small quantity of powdered jalap.

Where the patient is sensible of a seeming fulness of the vessels, with giddiness and occasional pains in the head, small bleedings, by applying leeches to the temples, may likewise be advisable.

If ulcers break out in the legs or any other part of the body on a total cessation of the menses, they ought to be regarded as critical discharges, and should by no means be healed up without substituting some other drain by an issue.

Should any scirrhous or cancerous affection of the uterus take place on a stoppage of the menstrual flux, as sometimes happens, all that can be done in such a case is to have recourse to palliatives, such as opium, hyoscyamus, and conium, in the manner pointed out in the succeeding diseases.

ORDER VI.

TUMOURS.

Increased bulk of a part, with little or no inflammation.

SCIRRHUS AND CANCER.

A Scirrhus is to be considered as the occult or primary stage of cancer, and is not an unfrequent consequence of inflammation when it has attacked or occupied glands. The part becomes of increased size, is knotty, hard, and irregular to the touch, being however unattended with any discoloration of the skin, and acute lancinating pains are every now and then felt darting through the tumour. At length a tendency to cancerous ulceration becomes obvious.

A cancer is an ulcer of the very worst kind, with an uneven surface, and ragged and painful edges, which spreads in a very rapid manner, discharges a thin acrimonious matter that excoriates the neighbouring integuments, and has a very fetid smell, and which is usually preceded by a hard or scirrhous swelling of the part, if glandular.

The disease is most commonly confined to glands, and particularly the testes and mammæ; but is nevertheless now and then to be met with in the uterus, as likewise in the face and other parts that are thinly covered with flesh, and which are at the same time a good deal exposed to external irritation, such as the lower lip, the angles of the eyes, the organs of vision, the alæ nasi, tongue, and penis. From a lodgment of soot in the rugæ of the scrotum,

chimney-sweepers who have arrived at the age of puberty are very subject to a peculiar cancerous affection in this part, and first noticed by the late Mr Pott.*

Cancer is most generally met with in persons advanced in life, and particularly in women about the period when the menses cease. The disease being often met with in unmarried females about this time of life, it has been thought by some that celibacy predisposes to the complaint. Women who have had no children, as likewise those who have had them but not suckled them, are frequently affected with cancer. From several persons of one family having been afflicted with cancer, it seems as if there had been an hereditary predisposition, from some peculiarity or structure, in these instances, to the disease. Climate appears to have some degree of influence in predisposing to cancer: in cold northerly regions the disease is not only more frequent than in the southern parts of Europe, but seems likewise to be more intractable in its nature.

It has been observed by many surgeons, that cancerous affections are most prevalent in persons of a scrofulous constitution.†

The experiments of Mr. North‡ and others prove the non-existence of specific cancerous matter. Mons. Alibert‖ inoculated himself and some of his pupils with cancerous matter; and although in some instances inflammation of the part and of the lymphatics proceeding from it occurred, yet nothing like scirrhus or cancer succeeded.

A cancer arises most frequently from some external injury, such as a blow; but is now and then to be met with as the consequence of previous inflammation excited by other causes.

Irritation during the scirrhous state of a gland, without any wound or breach of the skin, may be propagated to other glands, and these may take on a similar action with the gland first diseased; but absorption does not take place until the gland becomes ulcerated. When this is the case, the irritation from one gland to another goes on not only more rapidly, but absorption takes place from every part of the diseased surface.

A late writer§ has offered it as his opinion that cancer is produced by hydatids. That these may be formed on a cancerous gland cannot be disputed, but that they are generally to be met with, or are essential to the disease, cannot be admitted.

Cancer usually begins with a small swelling in the gland unaccompanied by pain or any discoloration It gradually increases both in size and hardness, in process of time is attended with lancinating pains, as if a sharp-pointed instrument was entering the tumour, and with varicose swellings of the subcutaneous veins, together with an uneasy and painful sensation in the neighbouring

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* See his Chirurgical Works, p. 734.
† See Howard on Cancer.
‡ See Observations on the Treatment of Scirrhous Tumours on the Breast.
‖ See Description des Maladies de la Peau.
§ See Dr. Adam's Observations on Morbid Poisons.

parts. Sometimes it remains in this indolent and occult or scirrhous state for a length of time, but in other instances it proceeds on to suppuration with great rapidity, and forms an ulcer. Its progress will, however, depend much on the state of the person's constitution, and other like causes. It has been supposed, that in proportion to the rapidity of the progress of any individual case, so is its degree of malignancy.

During the occult state of cancer, the pains recur at very irregular intervals, and are dependent upon causes concerning which nothing satisfactory is known. If the disease is seated in the breast, and the female of such an age that the catamenia have not altogether disappeared, she will usually suffer a considerable exacerbation of pain in the part about the times of their recurrence. The tumour will likewise undergo most likely a proportionally greater augmentation of bulk than during the same space of time at any other period.

When the tumour begins to form adhesions to the surrounding parts, and the disease is in the breast, it is not uncommon to find one or more of the axillary glands on the same side of the body somewhat enlarged.

As the disease approaches near the surface, the integuments which had hitherto retained their natural appearance begin to look puckered, or as if they were drawn together in folds. From this cause, the nipple will be sometimes so retracted and sunk as it were in the surrounding parts, that its existence might be overlooked by a superficial observer.

When the disease has advanced further, the skin becomes inseparably united to the tumour beneath it, and in a little time more it may be observed to have acquired a slight tinge of redness. The other characters of inflammation are also present, though some of them may be in an inconsiderable degree. After a time the whole surface of the swelling puts on a purple shining appearance, and in this state it continues with but little change till ulceration is about to take place. From the great exacerbation which usually happens at this period, a degree of febrile irritation will often be excited in the system at large.

The superincumbent parts at length give way to ulceration, and the patient probably experiences a temporary relief from the discharge of a small quantity of sanious or ichorous matter. In general it is not until after some time that the ulceration becomes deep and excavated; for under mild treatment it has been known to continue superficial for some months. Sooner or later, however, the ulcer assumes the true carcinomatous characters. It penetrates deep towards the more central parts, while at its circumference the edges appear hard and elevated. The surrounding skin puts on a livid aspect, and from the surface of the sore there is a considerable discharge of an irritating corrosive quality. Matter of a true purulent appearance is hardly ever furnished by carcino-

matous ulcers. The odour of the discharge impresses the organ of smell with a peculiar but indescribable sensation.

If the ulceration be extensive, it will be observed, that while one part of the sore is undergoing a sloughing process, another will be active in throwing forth luxuriant granulations of a loose and spongy texture. These changes appear sometimes to alternate with each other upon the ulcerated surface, and in their further progression give rise to considerable hæmorrhages from the erosion of the vessels.

From the derangement which is occasioned in the functions of the lungs by the morbid condition of the parts, there gradually comes on dyspnœa, attended by cough and some degree of emaciation, which symptoms are usually followed at no great distance by a fatal termination, and this frequently without any remarkable alteration in the external appearance of the diseased part.

Cancer of the breast is chiefly a disease of middle and advanced life; from forty to fifty years is perhaps the most frequent period at which it makes its appearance.

The female organ which is most likely to suffer from cancer, next to that of the breast, is the uterus, and, like the former, it is a disease of comparatively rare occurrence before the period of life at which the catamenia usually disappear. The early symptoms of this complaint somewhat resemble those of polypus and prolapsus uteri: among them may be enumerated a sense of weakness, with pain or uneasiness in the loins, leucorrhœal discharge, and a sense of bearing down. To these may be added weight and fulness in the region of the pelvis, with acute shooting pains across the cavity, and more or less of derangement in the functions of the chylopoietic viscera. There is also a pain in coitu, and on an examination with the finger, the os uteri is discovered to be partially thickened and indurated, with an increase of size in its aperture. It sometimes happens, however, that the enlargement begins higher up in the cervix uteri, the os uteri remaining closed. In both cases the uterus appears to be situated lower in the vagina than is usual in the healthy unimpregnated state, and when supported upon the finger, a sensible addition to its weight is to be perceived.

After ulceration has taken place there will be a constant discharge of an offensive sanious matter from the vagina. If an examination be again instituted, the os uteri will be found more open, and with ragged irregular edges. Pressure upon these parts will now occasion some degree of pain, and a little blood will commonly be observed to come away upon the finger. About this time the vagina undergoes a considerable deviation from its natural structure; it becomes somewhat hard to the feel, and its rugæ cease to be distinguishable. At the superior part it will frequently be affected with carcinomatous ulceration, communicated from the os uteri by the continuity of surface.

As the different functions of the body become more and more

disordered, emaciation increases with rapidity. Frequent retching and vomiting, with torpidity or irregularity of the bowels, arise, mental dejection and despondency ensue, and a sort of hectic fever is constantly present. Towards the latter period of the disease, if the ulceration of the vagina becomes extensive, there will frequently be an enlargement of the absorbent glands in the groin, and this sometimes arrives to such a degree as to occasion œdema of the whole lower extremity. It seldom happens that the hæmorrhage from the ulcerated parts is in so violent a degree as to prove fatal of itself.

The progress of scirrhus of the testicle is usually slower than where the disease occurs in other glandular parts, yet it is capable of being more or less accelerated according to the degree in which the different causes of irritation, whether local or constitutional, are permitted to have influence. The tumour goes on gradually to increase in size, and is attended with nearly the same symptoms and appearances that have been described as appertaining to the cancerous breast. The acute darting pain is at first confined to the precise site of the swelling, but afterwards extends in the direction of the spermatic chord to the abdomen, and even up the spine and in the loins.

In process of time the shape of the gland becomes totally obscured, and nothing remains to be distinguished but the enlargement, which is remarkable on account of its weight, excessive degree of hardness, and its surface being studded more or less with protuberant inequalities.

When the disease begins to extend, it proceeds from the testicle to the epididymis, and thence by the lymphatic vessels of the chord, till it arrives at the lumbar glands. In this course there is produced great thickening and induration of the different parts through which it passes. An irregular or knotted feeling of the spermatic chord is another and very striking effect of the extension of the disease. Some time after the lumbar glands have been contaminated, derangement in the functions of the various neighbouring viscera is perceptible, and at this time a prominent tumour may be distinguished through the parietes of the abdomen, consisting of a cluster of these enlarged lymphatic glands. In process of time, cancerous ulceration of the testicle ensues, and in some instances is extended to the scrotum.

Scirrhosity of the prostate gland is a disease with which men far advanced in life are very apt to be afflicted, but particularly those who imprudently produce an excitement of the seminal vessels by long toying with women, or by unnatural means, or onanism. The frequency of the disease may be attributed to the unusual degree of irritation which, in the present licentious state of society, is kept up in the organs of generation by Cytherean excesses, and their attendants, strictures and the use of bougies. After a time, sharp lancinating pains are felt darting through the

gland now and then, the flow of urine becomes considerably obstructed, and dysuria, and occasionally tenesmus, with ischuria, and other distressing symptoms, arise.

At length ulceration ensues, and the patient sinks gradually under a state of misery and pain, or he is cut off by a total suppression of urine.

The cancer with which chimney-sweepers are sometimes attacked, generally begins in the rugæ of the scrotum; in the form of a wart. This, from the itching and uneasiness it at first occasions, and from the part being frequently rubbed in the act of climbing and descending the chimneys, is often scratched and otherwise irritated; thus a constant stimulus is applied in addition to the action of the soot on the part. If the head of the wart is picked or rubbed off, another is soon formed; and at length there is not only a horny crust, but a thickened base beneath, proceeding inwards, until a large fungus or a spreading ulceration is produced, which at length occasions the testicle also to become affected.

Cutaneous cancer is most frequently observed to occupy the lower lip, the angles of the eyes, the alæ nasi, and penis. At its commencement it usually appears under the form of a small preternatural enlargement or elevation of the skin. Sometimes it is so hard to the touch and in consistence as nearly to approach to the nature of horn, while on other occasions it will bear a much nearer resemblance to a common wart. In a few instances it will put on the appearance of a small discoloured pimple.

Under whatever form the disease may first appear, a degree of surrounding hardness will invariably be found to take place. Some degree of shooting pain from time to time is likewise experienced in the part. In many cases ulceration seems to be materially accelerated by the accidental irritation of the patient's fingers, which are often, although unconsciously, applied in the vicinity of the disease. Sometimes, however, a sort of scale is generated so as to form a covering to the little tumour, and this will be removed and again be renewed several times in succession before ulceration is perfectly established.

When the part has once arrived to a state of ulceration, it quickly puts on those characters of malignity which have occasioned it to be classed as a species of cancer. The surface of the sore possesses, indeed, the common appearance of carcinomatous ulceration, and there is a discharge from it of sanious or other ulcerated matter. In cutaneous ulcer it seldom happens that the lymphatic glands begin to enlarge or grow painful till after the diseased part has been in a state of ulceration for a considerable time, which forms a striking point of difference between this disease and that which has its seat in glandular structures.

In a very great number of cases of cancer of the penis, it has been remarked, that phymosis had naturally existed; hence it has been inferred by some surgeons, that phymosis may generate a

predisposition to this affection. A review of the cases published by the authors referred to,* and in which amputation of the penis was performed, seems to countenance the opinion that cancer of the penis is an affection purely local, and hence less frequently produced than cancer of other parts.

Cancer of the tongue, like cutaneous cancer, seems to admit of a certain degree of variability in its appearance, which is, however, most commonly that of a small hard tumour situated on the upper surface of the tongue, and at no great distance from its anterior extremity. The tumour usually possesses a firm connexion with the subjacent parts, and, before arriving at a state of ulceration, it is not unusual to see it attain a size equal at least to that of a common hazel nut.

Another form under which this disease sometimes shows itself at an early period, is that of a little discoloured pimple, having a disposition to bleed very freely from the slightest cause; but there is likewise a third case, where carcinomatous ulceration suddenly breaks out upon the tongue without the part having previously suffered any morbid change of structure, or presented any unnatural appearance sufficient to attract notice.

The pain attendant on the disease in its different stages, though varying in degree, is yet always of that peculiar darting kind which belongs to cancer. When first complained of, it is only slight and partial; but gradually increasing in severity as the disorder advances, it will in time extend so as to be felt both about the fauces and base of the skull. The disease may continue a long time even in an ulcerated state without the health appearing to suffer very materially from it. The entire destruction of a great portion of the tongue will sometimes be produced by cancerous ulceration before death takes place in consequence of the disease.

Cancer of the tongue is more frequently met with in those who are pretty far advanced in years than in subjects under the age of puberty.

Scirrhous tumours are often removed with perfect safety, and thereby prevented from degenerating into true cancers, when extirpation is not delayed too long; but after a tumour of this description has ulcerated, thereby assuming the carcinomatous character, and has afforded an opportunity for an absorption of the matter into the system, there is every reason to suppose that a complete cure can seldom, if ever, be effected; for although we remove the diseased part, still the virus will be likely, sooner or later, to show itself in some other glandular place. Under such circumstances, extirpation will, therefore, in all probability, be attended with no lasting advantage.

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* See Practical Observations in Surgery, by Mr. Hey.
— Parallel of French and English Surgery, by Mons. Roux.

Sir Everard Home* has observed, that with respect to the internal structure and appearance of the breast affected with a scirrhus, if a section is made of such a tumour in an early stage, where the structure is seen to advantage, it puts on the following appearances :—The centre is the most compact, harder to the feel, has a more uniform texture than the rest of the tumour, and is usually of the consistence of cartilage. This middle part does not exceed the size of a silver penny, and from this in every direction, like rays, are seen ligamentous bands of a white colour, and very narrow, looking in the section like so many irregular lines passing to the circumference of the tumour, which is blended with the surrounding gland. In the interstices between these bands the substance is different, and becomes less compact towards the outer edge. On a more minute examination, transverse ligamentous bands of a fainter appearance form a kind of net-work, in the masses of which the new-formed substance is enclosed.

In a further advanced stage of the tumour, the whole of the diseased parts have a more uniform structure : no central point can be distinguished, the external edge is more defined and distinct from the surrounding gland, and the ligamentous bands in different directions are very apparent, but do not follow any course that can be traced.

No regular distinction of structure can be made in parts affected with carcinomatous ulceration. In the centre, however, is a small irregular cavity filled with a bloody fluid, the edges of which are ulcerated, jagged, and spongy.

When any gland has become enlarged, indurated, and shows a tendency to scirrhus, we should, from the earliest period, use our utmost exertions to discuss it if possible, or at least to prevent its further increase. Applications of a discutient and sedative nature should be had recourse to without delay ; pressure of any kind should be guarded against, particularly from the stays, if the breast is the part affected ; the bowels must be kept free and open by gentle purgatives administered from time to time, and a cooling regimen be enjoined, cautioning the patient to abstain from all vinous and spirituous liquors, and from other stimuli of every kind.

It will at the same time be necessary to draw blood from the vicinity of the diseased gland or glands by means of several leeches, which operation we ought to repeat frequently. They should never be applied to the skin immediately covering the tumour, for ulceration has been known to have been greatly accelerated when leeches have been suffered to draw blood from the surface of an inflamed scirrhus or cancer. By being applied

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* See his Observations on Cancer.
— Mr. Fearon's Treatise on this Disease.

in the neighbourhood, every good purpose will be secured, and the danger of exciting a comparatively dormant disease be avoided.

In the incipient stage of scirrhus, and in addition to the means just recited, blisters have sometimes been applied with the view of promoting a considerable serous discharge from the neighbourhood of the part. In a posthumous work* of the late Mr. John Howard, and published by Dr. Gower, we are informed, that the author was strongly of opinion much may be done in all incipient scirrhous tumours by repeatedly blistering the part, having however premised the frequent application of leeches, the use of discutient and sedative applications, with occasional purgatives and a cooling diet.

If blistering is ever thought of, this circumstance ought to be cautiously kept in view, viz. the skin which covers the tumour should be in an uninflamed state, and not have taken on the shining purplish hue of cancer, the excoriation being likely to heal kindly. If applied when the skin is in an irritable and inflamed state, it might tend to ulcerate the part, and prematurely bring on cancerous mischief, as happened in a case of scirrhous mamma which lately came under my inspection. The blister was applied by an ignorant pretender to a knowledge of curing such diseases; ulceration ensued and spread most rapidly, whereby the unfortunate woman was soon destroyed.

Immersion of the body in a warm bath, by directing the circulation to the surface of the body, and increasing both the sensible and insensible perspiration from the cutaneous glands and pores, might perhaps be employed with some advantage in scirrhous tumours.

To allay pain and irritation, and probably thereby retard the progress of the disease, we may employ opium, which we may give internally, and likewise apply externally mixed with the different preparations of lead that we use as sedatives and discutients.†

* See Mr. Howard's Practical Observations on Cancer.

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† 1. ℞ Liquor. Ammon. Acet. f. ℥j.
——— Plumb. Subacet. ℥ xx.
Aq. Puræ, f. ℥ij.
Tinct. Opii, f. ℥iss. M.
Ft. Lotio.
Vel,
2. ℞ Spirit. Camphoræ, f. ℥ss.
Acidi Acetici Dilut. f. ℥j.
Liquor. Plumb. Subacet. f. ℥j.
Tinct. Opii, f. ℥ij. M.

† 1. Take Solution of Acetate of Ammonia, one ounce.
——— Subacetate of Lead, thirty drops.
Pure Water, two ounces.
Tincture of Opium, one drachm and a half.
Mix them for a lotion.
Or,
2. Take Camphorated Spirit, half an ounce.
Distilled Vinegar, one ounce.
Solution of Subacetate of Lead, one drachm.
Tincture of Opium, two drachms.

If the means which have been pointed out are not after a fair trial attended with the benefit and relief that were wished for, we may then recommend a slight course of mercurial unction, either immediately over or in the neighbourhood of the diseased gland, together with small doses of the hydrargyri submurias internally, joined with antimony. In the early stage of the disease, as light course of mercury, conformable to the plan just mentioned and assisted by a decoction of vegetable substances which possess a diaphoretic effect, such as guaiacum, sassafras, sarsaparilla, and mezereon, of which the decoctum sarsaparillæ compositum is composed, has in some instances been attended with a good effect.

With regard to the use of mercury in scirrhous tumours, it is necessary however to mention, that when either given internally or used externally, it can only be of service in the first or early stage of the disease, when simple obstruction, and not altered organization, has taken place. By its tendency to hasten ulceration (a natural consequence of its action) it will be likely to prove highly prejudicial in all cases which are verging on cancer.

Hemlock is a medicine which, since the days of Stork, has been much employed in every stage of cancer, and there is reason to suppose sometimes with advantage. To derive this with the greater certainty, however, we should make use of it during the occult or scirrhous state, and before ulceration has commenced. In administering hemlock we ought always to begin with a small dose, and so augment it gradually till the patient experiences some little inconvenient effects on the head and stomach, such as nausea and vertigo, when the quantity is to be lessened, or the medicine wholly be desisted from for a short time. The extract is the most active preparation, and this may be given in pills of two grains each, in the number of from one to ten or twelve in the twenty-four hours.

Belladonna and hyoscyamus are medicines of the same class with conium, and the timely use of these has sometimes proved advantageous in glandular tumours and indurations that are likely to become cancerous.

Where no advantage seems to be derived from any of the means which have been advised, but on the contrary, the tumour is proceeding hastily on to ulceration, the only effectual remedy then left is the complete removal with the knife, not solely of the

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Vel,

3. R Cerat. Plumb. Acet. ℥j.

Opii in pulv. trit. ℥ss. M.

ft. Unguentum.

Vel,

4. A Empl. Plumbi.

Or,

3. Take Cerate of Acetate of Lead, one ounce.

Opium, rubbed into a powder, half a drachm.

Mix them into the form of an ointment.

Or,

4. Take a Plaster of the Oxyd of Lead, and apply it to the tumour.

indurated part, but of the whole glandular substance of the breast, so as to secure against a relapse; and this we should not fail to enforce most strenuously to the patient, provided the tumour is moveable and not attached to bony parts, and its local situation does not render the operation improper. If there be one or more enlarged lymphatic glands in the direction of the axilla, these are also to be cautiously removed.

The causes of the failure of operations for the removal of scirrhi proceed either from the constitution having been already involved in those diseased actions which were local in their origin, or from the diseased parts not having been perfectly and entirely removed by the surgeon. All carcinomatous tumours ought therefore to be removed at an early stage when the usual remedies fail in arresting the disease; and in performing the operation, the surgeon should not be contented merely to dissect away the diseased part from its neighbouring connexions; but a portion even of these should be cut away, so as to secure the patient against a recurrence of the disease.

To destroy the living powers of the morbid growth in scirrhus tumours, and to effect its consequent separation from the sound parts which are immediately adjacent, caustic applications, and particularly those composed of arsenic, have been much employed by itinerants and quacks; but when we seriously reflect on the danger and uncertainty which necessarily attend their operation, they must be held cheap in the estimation of the Profession, and a decided preference be given to the knife.

As the female breasts are liable to enlargements and indurations from external injuries, exposures to cold during a puerperal state, and such other causes as by inattention might possibly be mistaken for a scirrhus, it will certainly be necessary in all doubtful cases to scrutinize minutely into the rise of the tumour, the symptoms and appearances with which it is attended, and the progress that it has made, in order that we may ascertain the real existence of the disease in question, previous to our having recourse to an operation.

Where this has been neglected, in real scirrhus, and the inflammation has proceeded on to suppuration and ulceration, we are then to endeavour to correct the fœtor and acrimony of the discharge; to defend the adjacent parts from its effects; and to quiet the pain and lessen the irritability of the sore.

The first of these intentions is to be answered by washing the ulcer with the dephlogisticated muriatic acid diluted with three times its weight, or more, according to the irritability of the sore, and the smarting it occasions, as recommended by Dr. Crawford; and then applying a carrot poultice, or one composed of an infusion of malt, oatmeal, and yest, as directed under the head of Gangrene. The cataplasma carbonis (which is composed of about half a pound of the common bread poultice, with two ounces of wood charcoal in very fine powder) is another application which has likewise been

found highly useful in sweetening fetid ulcers, and obtunding the acrimony, and may perhaps be preferable to the fermenting cataplasm, as this, by lying on the part some hours, becomes more offensive than the smell it was intended to correct.

The charcoal should be taken fresh from the fire, and powdered very fine as soon as cool; when it is immediately to be put into a bottle and corked, in order that it may not be exposed to the air.

The application of carbonic acid gas, or air in its elastic state, has been much used in the ulcerated stage of the disease, and often with a seeming happy effect, as we are informed by Dr. Ewart,* of Bath, who employed it agreeably to the following process :—

The neck of a bladder was cut off, so as to make a circular aperture in it, of such dimensions as to correspond nearly with the size of the ulcer of the breast. A round hole of the same size was cut in a piece of soft leather, spread with adhesive plaster and large enough to surround the ulcer: the cut end of the bladder was introduced through the hole in the leather, and its edges folded back, and stuck to the plaster on the opposite side, forming somewhat of the shape of a round hat, the plaster resembling the rim, and the bladder, when distended, the crown. In order more effectually to cement the adhesion of the bladder to the plaster, and to make it air-tight, narrow circular strips of plaster were applied round their juncture both inside and without. The large plaster was then fixed on the mamma, the aperture in its centre, with the bladder attached to it, being placed exactly over the ulcer, no part of which was touched by the plaster. A small orifice was made at the fundus of the bladder sufficient to admit a tube of about a quarter of an inch diameter, which communicated with the top of an inverted cylinder, suspended upon water, which cylinder was filled with carbonic acid gas. The bladder being closely squeezed, to expel from it the atmospheric air it contained, and the above-mentioned tube being inserted into the orifice formed to receive it, and tied by a ligature passed over the bladder, the inverted cylinder was pressed down in the water, so that the carbonic acid air was made to rush through the tube and distend the bladder: the tube being then withdrawn, the orifice of the fundus of the bladder was tied, to prevent the escape of the carbonic acid air, which was thereby kept in contact with the ulcer. As often as the bladder collapsed so as to show that much of this air had got out, it was filled in the same manner as before: and this operation was repeated sometimes twice, sometimes three times a day, according as it appeared necessary. A proof of this simple apparatus fully answering its purpose, was, that the bladder, when filled at night, was

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* See his History of two Cases of ulcerated Cancer of the Mamma, one of which has been cured, the other much relieved, by a New Method of applying Carbonic Acid Gas.

for the most part found to contain a considerable quantity of its air in the following morning.

The second indication of defending the adjacent parts from being acted upon by the acrimony of the discharge, is to be effected by the strictest attention to cleanliness, and by dressing or covering them with mild cerates, composed of calamine, or the acetate of lead: and

The third indication, of quieting the pain, and lessening the irritability of the sore, is to be answered by fomenting it with a decoction of poppies, and then applying a cataplasm of hemlock, as likewise by an internal use of opium or hyoscyamus at the same time.

If the part affected will admit of it, the tumour should be suspended, so as to keep it as easy as possible night and day. It should be kept neither too warm nor too cold, as both extremes would be injurious.

Henbane, nightshade, and others of the narcotic class, have also been employed in external applications as well as hemlock. When used in this way, the leaves may be boiled in milk, so as to form a decoction sufficiently strong, and with this the part must be frequently fomented. The gastric liquor of graminivorous animals applied to putrid and cancerous ulcers, has sometimes been attended with benefit.

As a topical application in external cancer, such as of the lip, mamma, &c., lint dipped in a solution of the sub-borate of soda,* and applied to the ulcerated surface, renewing it as often as it becomes dry, has not unfrequently been attended with a good effect, occasioning the discharge to assume a comparatively healthy and purulent appearance, the size of the ulcer to be much reduced in a short time, and the pain to be rendered trifling.

Applications of a caustic nature have been much used in the ulcerated stage of cancer, and they have been employed under a variety of forms; but their principal ingredients are well known to be either arsenic or the oxymuriate of mercury. The most noted are, the Arundel powder, Guy's powder, and Plunket's powder,† the last of which is a composition of crow's foot, dog's fennel, and arsenic. It is prepared and applied as follows:—the crow's foot and dog's fennel being fresh gathered and bruised, the other ingredients are to be added, and the whole beaten into a paste. This is to be formed into balls, and dried in the sun. When used,

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* 5. ℞ Sodæ Sub-boratis, ℥iij.
Extract. Hyoscyam. ℥ij.
Aq. Distillat. tepid. ℥viij. M.

† 6. ℞ Ranunculi Acris Fol.
Flammulæ Vulg. Fol. ää ℥j.
Arsenic. Alb. Lævigat. ℥j.
Sulphuris Loti, ℈v. M.

*5. Take Sub-borate of Soda, three drachms.
Extract of Henbane, two drachms.
Distilled Water made warm, eight ounces.

† 6. Take Meadow Crowfoot,
Dog's Fennel, of each one ounce.
Arsenic, one drachm.
Washed Sulphur, five scruples.
Mix them.

they are to be powdered, mixed with the yolk of an egg, and applied, on a piece of pig's bladder, to the surface of the cancer. In this state the caustic is to remain, till the eschar separates spontaneously. When this remedy is used in cancers of the nose or lips, the greatest circumspection will be necessary, lest a portion of the arsenic should be swallowed.

A caustic composed of one ounce of powdered antimony, and half an ounce of powdered arsenic, fluxed together in a crucible and afterwards reduced to powder, was very extensively used by the late Mr. Justamond in his treatment of cancers, and often with a most happy effect. By an addition of powdered opium, this remedy may be reduced to any degree of mildness. Equal parts of white arsenic and sulphur form a caustic application that is very powerful.

The paste arsenicale is a favourite application of many of the most eminent French surgeons in cancerous affections.* This is composed of seventy parts of cinnabar, twenty-two of sanguis draconis, and eight of the oxyd of arsenic, which are made into a powder, and formed into a paste with saliva at the time of applying it.

A good method of using arsenic is by mixing about two or three grains of it with a drachm of pulvis calaminæ, and strewing a little of the powder on the cancer every day till the whole is destroyed and sloughs off.

Whenever caustic is applied, it will be necessary to give considerable doses of opium to allay the irritation and pain it occasions; and we should also use anodyne fomentations, composed of a decoction of bruised poppy heads.

Arsenic seems to possess in cancer powers which are peculiar and distinct from those of other caustics. If applied to the skin it will not affect it; but if this is abraded, it will produce an eschar to a certain degree, but it will be superficial. When continued for any length of time, the eschar will not be increased, yet the parts beneath the eschar will be found sloughed to a degree and extent proportionable to the strength in which the mineral has been applied: in short, to accomplish this end by the application of arsenic, it is not necessary that it should be in contact with the whole of the part it is intended to destroy.

Arsenic, besides being applied externally in cancers, has likewise been administered internally, and sometimes with a seeming good effect. Where the practitioner is desirous of making a trial of it, he can give it in a solution, as mentioned under the head of Intermittent Fever. A poultice made with crumb of bread, and moistened with some of this solution, diluted to the proportion of one grain of arsenic to a quart, might probably prove a very good external application, as well as the former, which have been noticed.

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* See Sketches of the Medical Schools of Paris, p. 45, by Mr. J. Cross.

A saturated solution of muriated barytes, in doses of from three or four to ten or twelve drops twice a day, in any convenient vehicle, has been recommended by Dr. Crawford in cancerous and scrofulous affections. In the early stage of cancer, it seems to have been frequently used with some advantage, but never in its last stage.

Some cases of cancer were published a little time back by Mr. Carmichael,* wherein he had employed different preparations of iron with some success, and which under a failure of other means may therefore be tried. For internal use, he is inclined to prefer the sub-oxyphosphate of iron to the carbonate, which like all the other salts of this mineral, answers best when given in small doses, and frequently repeated; and he thinks the best manner to exhibit this preparation, is to blend it with white of egg, and to add a small portion of pure fixed alkali, which will render the iron more soluble in the stomach, afterwards forming the whole into pills with a little powdered liquorice. When the carbonate of iron is employed, it may be given in doses of five grains, repeated every four or five hours. After trying a variety of cathartics for the purpose of obviating the costiveness which a course of ferruginous medicines is apt to occasion, Mr. Carmichael discovered that aloes answered the best; and, moreover, that this cathartic, in combination with iron, has a far greater effect than if given in a more considerable quantity alone. He experienced that half a grain of aloes, combined with four grains of the carbonate of iron in the form of a pill, and taken three times a day, was perfectly sufficient to keep the bowels free and open.

The preparations of iron which Mr. Carmichael had used externally in ulcerated cancers, are the carbonate, the phosphate, oxyphosphate, acetate, and arseniate. He says, that the best mode of applying these preparations of iron possibly may be to blend them with water to the consistence of a thin paste, with which the surface of the ulcer should be covered, and the application in general be renewed in twenty-four hours. In occult cancers, he has used a solution of the sulphate of iron as an external application, and commonly in the proportion of an ounce of the salt to a pint of water; he prefers however, the acetate of iron diluted with eight or ten times its weight of water. These embrocations are applied by means of folded linen, over which a piece of oiled silk should be placed to prevent the fluid from injuring the clothes. From the use of arseniate of iron Mr. Carmichael has also found considerable advantage. It has indeed been doubted, by some practitioners of eminence, if the cases reported by Mr. Carmichael, in which the preparations of iron have been successful, were truly cancerous.

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* See his Essay on the Effects of Subcarbonate and other Preparations of Iron upon Cancer.

We are told, however, by Dr. Denman,* that there is scarcely a class of medicines in the Materia Medica with some of which he has not made repeated trials in all the different stages of cancer, but the benefits derived from the use of any of them have been very little indeed, if compared with those obtained by the use of preparations of iron, and generally that all other medicines have been wholly unavailing.

The common effects of iron, when used in cases of ulcerated cancer, are a speedy mitigation of pain, an amendment in the appearance of the sore, and the correction of the fœtor, with a diminution in the quantity of discharge. Even in hopeless cases it renders the progress of the malady less horrible and distressing, we are told, than when it is treated in any other manner.

Carcinomatous ulcers of the tongue have been successfully treated by a course of the nitric acid. A case of this nature, where the ulceration was of considerable magnitude, is reported in No. 141 of the London Medical Journal, which, after having resisted various remedies, was completely cured by nitric acid.† An opiate was given at night, and to prevent the acid from corroding the teeth it was directed to be sucked through a tube. In fourteen days after the exhibition of this medicine, healthy granulations were perceived to shoot out at the bottom of the ulcer, which gradually healed from this time; and in the course of three months, although half the tongue had been in a state of ulceration, it was perfectly healed. Nothing was applied to the diseased part but a lotion composed of extractum conii, spt. rectificatus et aqua pura, to which little or no efficacy was ascribed.

In cancerous ulcers of the face the expressed juice of the *Carduus tomentosus* Linn. (the woody-headed thistle or friar's crown) has been employed with much advantage by the Continental physicians, and particularly by Dr. Handel. He ordered his patients to anoint the parts affected with the fresh juice six or eight times every day, and he found that in the course of a fortnight it checked the progress of a most malignant cancer of the face; but it produced no relief whatever where the female breast was affected with that loathsome disease.

In the cancer scroti, to which chimney-sweepers are peculiarly subject, extirpation bids fair for effecting a complete cure, if done before the virus has seized the testicle and the habit is tainted. A case of this nature some time ago came under my care, in which the diseased part was removed by ligatures; the patient having been, some months before his application to me, discharged from

* See his Observations on the Cure of Cancer, p. 77.

† ℞ Acid. Nitric. Dilut. f. ℥j.
Mellis, f. ℥ij.
Aq. Puræ, Oij. M.
Capiat cochlear. iij. sæpe in die.

† Take Diluted Nitric Acid, one ounce.
Honey, two ounces.
Pure Water, two pints.
Mix them. Three table-spoonsful are to be taken frequently throughout the day.

the Winchester Hospital, for refusing to submit to an extirpation of the part with a knife, to which, undoubtedly, a decided preference was due. The cure, however, proved as complete a one as I ever witnessed, although the case was somewhat deplorable, the patient being far advanced in life, and much emaciated by disease, pain, and poverty.

In every species of open cancer, the air should be excluded as much as possible; a covering of double oiled silk may therefore be applied over the dressings.

A new process by mechanical pressure has lately been suggested, and indeed practised with some success, for the cure of scirrhus and cancer, by Mr. Samuel Young,* and the means employed by him to effect the pressure have been plaster straps, sheet lead forming shields of various thickness, tin plates, linen compresses, and the use of appropriate rollers. The strength of the application is to be progressive, commencing in most cases with the use of straps only, in some by single, and in others by double layers; the force of their application controlled by the existing circumstances, and the sensations of the patient. Scirrhus of the breast may be specifically compressed by the use of the pressure plates, and the adjustment of the linen compress, including at the same time a general pressure of the whole. In cases of open cancer the wound is to be filled with powdered chalk, and the surface well dusted with hair-powder, after which the pressure is to be applied as in the case of scirrhus. Irritable parts should be defended by some goldbeater's skin. The best composition for the straps was found by Mr. Young in equal parts of common strengthening and soap plasters, mixed and spread somewhat thinly on linen.

The plaster should be uniformly smooth; and in the application of the straps, which ought to be long and commanding, it is of the first importance that all wrinkles should be avoided, and that an equal surface of resistance should be given. In the direction of specific pressure on the diseased part all sorts of partial stricture ought to be avoided.

The effects produced by Mr. Young's plan of treatment are certified by some other practitioners who have been eye-witnesses to it, that there is a very rapid stop put to the ravages of the disease, whether in a state of scirrhosity or ulceration; the discharges are gradually lessened, and, from being of a most acrimonious kind, become bland and salutary. Besides, there is evidently a gradual decrease of the tumefaction and induration, and the whole not only assumes an appearance of amendment, but a promise of recovery. These are indeed very great advantages.

In a case which lately occurred at the Middlesex Hospital, Mr. Young's plan of treatment was adopted, and was found to have

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* See Cases of Cancer and Cancerous Tendency successfully treated by Mr. Samuel Young, Surgeon.

exceeded the expectations of the most sanguine. Further experience has not, however, sanctioned it.

FUNGUS HÆMATODES, OR MEDULLARY SARCOMA.

A DISEASE has of late attracted the attention of some surgeons, and has been pretty generally classed and treated as a cancerous affection in whatever parts of the body it may have been known to occur; but although in its history it has some analogy to cancer, still its symptoms and appearances on dissection are so different from those of cancer, that it cannot, I think, with propriety be considered as a disease arising from the same morbid alteration of structure. By some writers* it has been named the fungus hæmatodes; by others,† the medullary sarcoma; and others again have given it the appellation of spongoid inflammation. Mr. Burns,‡ who has adopted the latter name, mentions it as appearing only in the superior and inferior extremities; but this probably from his not having met with any other cases of it; whereas the other writers describe it as occurring likewise in the ball of the eye, testicle, liver, lungs, uterus, female breasts, and other parts.

A great difference of opinion seems to exist between the English and French pathologists respecting the precise application of fungus hæmatodes. Mr. Roux asserts,‖ that most of the cases pointed out to him, when in London, as specimens of this affection, were merely a variety of carcinoma, the soft fungous cancer; not preceded, like the more common form, by a state of scirrhus. He denies the existence of what we call fungus hæmatodes as a specific or peculiar malady.

The progress of fungus hæmatodes, as well as of cancer, is generally slow. When ulceration has taken place, neither of them discharge a purulent matter, but a thin fetid ichor, and occasionally they bleed profusely. They both sometimes assume a fungous appearance, and during their progress contaminate the absorbent glands which are in the course of circulation: they are also equally destructive, communicating the disease to the neighbouring parts, whatever the nature of these may be, whether cellular membrane, skin, muscle, periosteum, or bone.

Fungus hæmatodes is generally a disease of early life, whereas cancer is usually confined to those who are advanced in years. Cancer, moreover, seems to be confined to a very few organs of the body, and to a few textures, whereas fungus hæmatodes has

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* See Practical Observations on Surgery, by Mr. Hey, of Leeds, 1803.
— General Observations on Fungus Hæmatodes, by Mr. J. Wardrop, of Edinburgh.
† See Surgical Observations, 1804, by Mr. Abernethy.
‡ See his Dissertation on Inflammation.
‖ See his Parallel of French and English Surgery.

been detected in parts where no true scirrhous structure has been ever met with.

On dissection, fungus hæmatodes presents a very different series of phenomena from the scirrhous tumour. When it appears on the external parts of the body, and has not yet acquired a considerable bulk, instead of being hard and unyielding, it is soft and elastic, and has a tolerably equal surface. Its form, when removed from the body, is accurately circumscribed, having generally a distinct covering of condensed cellular membrane. In place of the hard, fibrous-looking substance (the principal component part of scirrhous tumours) the morbid growth in fungus hæmatodes consists of a soft pulpy matter, which mixes readily with water, and is somewhat hardened by acids, and by being boiled in water. It has been compared to medullary matter in consistence and colour. When the skin or covering of fungus hæmatodes has been eroded in the progress of the disease, instead of the morbid growth being destroyed by ulceration, a fungus arises from it, and the tumour seems to increase more rapidly in bulk. If the fungus hæmatodes is not interrupted in its progress, both the original tumour, and the fungous mass growing from it, attain a considerable size, and the fungus, which is of a dark-red or purple-coloured mass, of an irregular shape and of a soft texture, is easily torn, and bleeds profusely when slightly pressed or otherwise injured.

A want of success has generally attended all efforts in the cure of fungus hæmatodes, in whatever part of the body the disease has existed. One successful case of it, however, came under my care some years ago, during my residence at Guildford in Surry.

The patient was a man about forty years of age. The fungus had attained the size of a small cauliflower, and at times bled profusely. It had been of some months' standing when I first saw it, was of a deep red or purple colour, discharged a fetid, ichorous matter, and was seated in the left hypochondrium. The tumour and excrescence were removed by one or two applications of arsenic reduced to powder, and combined with sulphur and opium, and the wound healed up kindly in due time by the common and usual dressings. About a year after, the man was carried off, as I have since understood, by some complaint seemingly unconnected with his former disease.

Where the fungus has a narrow pedicle, and we are enabled to apply a ligature with tolerable ease, possibly it may be most advisable to resort to it in the first instance, taking care to make it only of such a tightness as not to cut the vessels, but merely impede their circulation. When the fungus with the surrounding ligature falls off, should any slight hæmorrhage ensue, a saturated tincture of galls or some other styptic may be employed to suppress it. Should the surface show any disposition to renew the fungus, the part may be sprinkled with arsenic combined with opium, as before mentioned; which application may be renewed a second time after the slough is thrown off, if requisite.

Of BRONCHOCELE.

This disease is marked by a tumour on the fore part of the neck, and seated between the trachea and skin. In general it has been supposed principally to occupy the thyroid gland.

It is a very common disorder in Derbyshire, but its occurrence is by no means frequent in other parts of Great Britain or in Ireland. Among the inhabitants of the Alps, and other mountainous countries bordering thereon, the Valois, Valteline, at Lucerne, Berne, Fribourgh, in some parts of Piedmont, in the valleys of Savoy and at Milan, it is a disease which is very often met with, and is there known by the name of goitre. The cause which gives rise to it is by no means certain, but by some writers it has been attributed to a use of snow water.

From its having been observed that the inhabitants of districts abounding with saline and mineral springs are more frequently affected with diseases of this sort than persons living in other situations, it has been supposed that the waters descending from these mountains, with which the dissolved snow mixes itself, may also be impregnated with some saline or mineral ingredients capable of producing this singular affection in the throat.

Dr. Saunders observes,* that snow water has long lain under the imputation of occasioning those strumous swellings in the neck which deform the inhabitants of many of the Alpine valleys; but that this opinion is not supported by any well-authenticated indisputable facts, and is rendered still more improbable, if not entirely overturned, by the frequency of the disease in Sumatra, where ice and snow are never seen; and its being quite unknown at Chili and in Thibet, though the rivers in these countries are chiefly supplied by the melting of the snow with which the mountains are always covered. Certain experiments have moreover proved that the water of dissolved snow is perhaps the purest of any that can be procured.

A modern writer,† in his History of Java, mentions, that there, as well as in Sumatra, there are certain mountainous districts in which the people are subject to those large wens in the throat, termed in Europe goitres; and the cause assigned by the natives is the quality of the water, but that there seems good ground for concluding that it is rather to be attributed to the atmosphere. In proof of this he tells us, that there is a village near the foot of the Teng'gar mountains in the eastern part of the island, where every family is afflicted by this malady, while in another village situated at a greater elevation, and through which the stream descends which serves for the use of both, there exists no such deformity. He also mentions, that these wens are considered as hereditary in some families, and thus seem independent of situation.

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* See his Treatise on Mineral Waters.

† See History of Java, vol. i page 60, by Sir T. S. Raffles, late Governor thereof.

The disease in question is evidently of too local a nature to be attributed solely to an habitual use of snow water, nor can it be brought on by using water impregnated with calcareous earth, as some have imagined ;* for the same effects are not uniformly produced where such water is used. A predisposition to bronchocele is, I think, often entailed by parents upon their children, as well as that glandular affection known by the name of scrofula ; which fact is corroborated by the strongest evidence, as I know a family consisting of seven, all of whom were attacked with it before they arrived at the age of puberty ; the father having been afflicted with it at an early period in life. This family resided at Crondall, in Hampshire, and were the only persons in the place who laboured under it. The predisposition to the disease must therefore have been entailed on the children by the parent. Where we meet with the disease in particular districts, may we not therefore with good reason attribute its frequency of occurrence rather to the inhabitants of those regions being somewhat secluded from the rest of mankind, and intermarrying among each other, thereby entailing the predisposition to it on their offspring, than to any peculiarity in the articles used for diet?—See Cretinism.

In those situations in the vicinity of mountains where the disease is found to be endemial, it has been attributed by some to a peculiarity in the air, and it has indeed been found more generally prevalent among the lower class of people and those who are most exposed to the unguarded influence of the weather, and various changes that take place in the air of such situations.

The swelling in bronchocele is at first without pain or any evident fluctuation, and the skin retains its natural appearance ; but as the tumour increases in size it grows hard and irregular, the skin acquires a yellow colour, and the veins of the neck become varicose ; the face is subject to flushings, and the patient complains of frequent headachs, and likewise of pains darting through the body of the tumour.

When the disease is of long standing, and the swelling considerable, we shall find it in general a very difficult matter to effect a cure by medicine or any external application ; and it might be unsafe to attempt its removal with the knife on account of the enlarged state of its arteries and its vicinity to the carotids ; but in an early stage of the disease we may often be able, by the aid of medicine, to effect a cure, particularly if assisted by frequent frictions over the tumour.

Bronchocele has by some practitioners been supposed to be a dropsical affection of the thyroid gland ; and it is true that a great number of capsules filled with water have in one or two instances been found in it on dissection, but in general no such appearances are to be observed. In two cases examined by Mr. Benjamin Bell, this gland was evidently much diminished in size from the compres-

* See Coxe's Account of Switzerland.

sion of the tumour, which was chiefly composed of condensed cellular substances, with effusions of a viscid brown matter in different parts of it. To me the tumour appears to be of a steatomatous nature.

To treat bronchocele judiciously, I am of opinion we ought at the same time that we give appropriate medicines internally, to employ local remedies, but particularly friction with the hand for at least half an hour three times a day, the efficacy of which may probably be assisted by the joint use of such applications* as are calculated to excite the action of the absorbent system. Should the size of the tumour not be diminished after a due time by means of friction, we may then recommend the action of a blister or of a plaster of ammoniacum with mercury. Slight electrical shocks may occasionally be passed through it. If the tumour is at any time highly painful, topical bleeding by means of a few leeches might be beneficial.

Possibly pressure on the diseased part might prove a powerful auxiliary to topical bleeding and the other means.

Passing a seton through the tumour by means of a trocar-pointed needle, and keeping up a proper discharge thereby, until the swelling has entirely subsided, may be tried if the other means which are recommended should fail, and there be danger of dissolution from the great size of the tumour. Some cases of bronchocele which were successfully treated in this manner, are recorded in vol. x. part i. of the Medico-Chirurgical Transactions of London.

In that species of bronchocele where the enlargement of the thyroid gland partakes of an inflammatory character, with a dilatation of its arteries or veins, and where the tumour is firm, round, and pulsates strongly, especially at its upper part where it is broadest, increases rapidly, and produces oppression of respiration and deglutition, the operation of placing a ligature on the superior thyroidal artery has been practised in some cases with success, although in others it has failed. The operation was first attempted by Mr. Blizard, and without success; but it has been successfully practised by Professor Walther of the University of Bonn,† and others.

The medicine which has proved most efficacious internally in this

† See Medico-Chirurgical Transactions, vol. x. page 312.

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* 1. ℞ Liniment. Sapon. Comp.
Vel,
2. Liniment. Camphor. Comp. ℥j,
Liquor. Potassæ, ♈ xx. M.
Vel,
3 ℞ Unguent. Hydrargyr. fort. gr. x.
Inungatur supra partem tumidam omni mane et nocte.

* 1. Take Compound Soap Liniment.
Or,
2. Take Compound Camphor Liniment, one ounce.
Solution of Potass, thirty drops.
Mix them for an embrocation.
Or,
3. Take strong Mercurial Ointment, ten grains.
This quantity may be rubbed in morning and night over the tumour.

disease is burnt sponge, and the form under which it is usually administered is that of a lozenge. Many persons labouring under bronchocele have been cured by this remedy, some of whom began to suffer much, and to be seriously alarmed on account of the difficulty of deglutition and respiration with which their complaints were attended: but whether it cures in a shorter space of time by being administered in the form of a lozenge, so as to allow of its gradual solution, in preference to being swallowed at once, is a point not yet fully ascertained.

Dr. Cheston of Gloucester, has found burnt sponge to succeed in various cases when employed agreeably to the annexed formula,* and subject to the following regulations, which appear to be an improvement on the methods recommended in the Coventry receipt,† under the sanction of Dr. Bates:—

When the tumour appears about the age of puberty, and before its structure has been too morbidly deranged, a pill consisting of a grain or two of the hydrargyri submurias, must be given for three successive nights, and on the fourth morning a saline purge. Every night afterwards for three weeks one of the troches should, when the patient is in bed, be put under the tongue, suffered to dissolve gradually, and the solution be swallowed. The disgust at first arising from this remedy soon wears off. The pills and purge are to be repeated at the end of three weeks, and the troches had recourse to as before; and this plan is to be pursued till the tumour is entirely dispersed.

It appears to me that we should stand a better chance of effecting both a speedier and more certain cure by administering the remedy more frequently than is here recommended by Dr. Cheston, and likewise in more considerable doses than are contained in the Coventry receipt;‡ for instances have occurred where one lozenge was taken even twice a day for a length of time to no purpose; but when the number was increased to three, a good effect was soon evident.

The formula inserted below‖ is the preparation of calcined sponge which I have been in the habit of employing, and generally with the desired success. Care must be taken that no more syrup be used than is absolutely necessary to make the dry ingredients

† See the Pharmacopœia Chirurgica, p. 139.

‡ The quantity of calcined sponge in each bolus is only ten grains.

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* 4. ℞ Spongiæ Ustæ, ℥ss.
Mucilag. Acaciæ Gummi, q. s.
Fiat Trochiscus.

‖ 5. ℞ Spongiæ Ust. ℥vj.
Pulv. Gum. Acaciæ, ℥j.
—— Zingib. ℥ss.
Syrup. Simpl. q. s. M.
ft. Massa, in trochiscos duodecim distribuenda, quorum unus detineatur sub linguam donec liquescat.

* 4. Take Burnt Sponge, half a drachm.
Mucilage of Gum Acacia a sufficiency to form a lozenge.

‖ 5. Take Burnt Sponge, six drachms.
Powdered Gum Acacia, one drachm.
—— Ginger, half a drachm.
Common Syrup, a sufficiency.
Mix them, and divide the mass into twelve lozenges, of which one is to be kept under the tongue until it dissolve.

cohere; for which reason it must be added slowly, and the mass must be well beaten. The lozenges are to be dried before the fire on a plate that has been slightly oiled to prevent them from sticking, and must be kept in some vessel tied over with bladder. One of them is to be placed under the tongue morning and night so as to admit of its gradual solution; and if, after a short time, no apparent benefit seems to be derived, the same may be repeated thrice or even four times a day.

Sulphureted potash dissolved in water (in the proportion of thirty grains to a quart daily) is a remedy which has been employed by Dr. Richter with success in some cases where calcined sponge failed. Occurrences of this nature will rarely happen, however, if the disease is counteracted in time.

We are informed by the Rev. Joseph Townsend, in his Guide to Health, that the disease is very frequent in the Vale of Pewsey, and that during thirty years he never failed to cure it in all those who applied to him for advice. He mentions, that he formerly gave lozenges of burnt cork, burnt sponge, and pumice-stone, in equal parts, similar to Mr. Bates's Coventry remedy, and always found this sufficient without any other medicine or application: but latterly, considering that it is the alkali of these lozenges which combines with the fat collected on the thyroid gland, and making a soap, he has confined himself wholly to burnt sponge, which abounds with soda.

Whether burnt sponge administered in the form of lozenge, or swallowed at once, acts locally; and if it acts locally, whether it is conveyed to the thyroid gland by means of absorbents not hitherto discovered; or whether the thyroid gland is a mucous gland, and is stimulated to excretion by the action of this medicine on the neighbouring parts, has not been ascertained. Such theories have however been suggested.

From the remedy in question having been so frequently employed in scrofulous cases with advantage, I am induced to suppose that its effects are by no means of a local nature.

It has been observed, under the head of the last-mentioned disorder, that the sodæ subcarbonas being the basis of burnt sponge, is now frequently employed instead of it, and it is indeed a more active medicine. In bronchocele it may likewise be substituted instead of calcined sponge, and may be made up into lozenges in the same proportion and manner as have been advised with the latter.

The functions of the intestinal canal are to be regulated throughout the course of the disease by some gentle cathartic, such as a few grains of the hydrargyri submurias, joined with rhubarb or jalap.

A case is recorded in the 13th volume of the Medical and Physical Journal, p. 13, which resisted a long-continued course of burnt sponge, and was at last removed by a slight mercurial course. Under a failure of the means which have been mentioned,

it may, therefore, be right to make a trial of the latter, directing a small quantity of the unguent. hydrargyr. fortius likewise to be rubbed in over the diseased part every night, as the friction is to be considered as a powerful auxiliary.

A new (and it would appear a very successful and powerful) remedy for bronchocele, is reported by Dr. Coindet, in some of the foreign Journals.* It is iodine, different preparations of which, according to his statement, were employed by him with singular benefit. One of these was a solution of 48 grains of hydriodate of potassa, equivalent to 36 grains of iodine, in an ounce of water; and to increase the power of the medicine in cases of long-standing or severity, iodine was sometimes dissolved in this solution. Another preparation employed was made by dissolving 48 grains of iodine in an ounce of alcohol, which he calls the tincture of iodine.

The dose for an adult was ten drops of one of these preparations in half a glass of the syrup of capillaire and water, taken early in the morning, fasting; a second dose at 10 o'clock, and a third in the evening or at bed-time. At the end of the first week, 15 drops were given in the place of 10, three times a day, and in a few days after, when the effect seemed evident on the tumour, the dose was increased to 20 drops. This quantity was rarely exceeded, and was found in general sufficient to dissipate the largest goîtres.

Iodine ointment rubbed in over the tumour of bronchocele is said to produce even a more rapid cure than when the medicine is taken internally; but it will be best to employ iodine in both ways at the same time.

The ointment is made by rubbing up one drachm of pure iodine with an ounce of lard, or half an ounce of hydriodate of potass, with one ounce and a half of adeps præparata, the former in the quantity of a scruple, the latter about the size of a filbert, may be rubbed in over the tumour every night. Its effects may be assisted by the occasional application of leeches.

In removing morbid growths by promoting their absorption, Dr. Baron† is of opinion, that we have no medicine possessed of powers equal to those of iodine. Its salutary effects are an increase of appetite, and of the strength of the pulse: whenever these are produced, we must watch with the greatest care that the salutary limits are not exceeded, and the pernicious consequences of an over-saturation of the system, induced.

DRACUNCULUS, OR GUINEA-WORM.

This disease consists in a small round worm, very much resembling the string of a violin, and of a white colour all over,

* See Annales de Chimie, Septembre. Journal de Pharmacie, Octobre 1820.
† See his Illustrations of Inquiry respecting Tuberculous Diseases.

except the head, which is black, that is discovered in different parts of the body, immediately between the muscles and cellular membrane. The arms, legs, and thighs, are, however, the most general seats of it, in which parts it is often found of the length of one or two feet.

It is a disease chiefly to be met with among negroes that are brought from the coast of Africa, or sailors who are lately returned from thence, and has generally been supposed to arise from drinking or bathing in the waters of stagnant ponds or wells, where the animalcules or embryo worms are deposited. It is said also to be a common complaint at Bombay, and all over that part of the coast of India,* particularly during the rainy season.

Sir James M'Gregor reports, in his Medical Sketches, that this malady prevailed very much on the voyage from India to Egypt, both among the troops and seamen; and it was only by separating the sick from the healthy, and by a very strict attention to cleanliness, ventilation, and fumigation, that he was able to arrest its progress. He by no means, however, attributes its appearance to the water which was drunk, as this came from different quarters, Bombay, Ceylon, and Madras; for the officers of the 88th regiment, as well as the artillery, drank the same water, he mentions, and yet escaped.

It is obvious, therefore, that the embryos of the worm must have punctured through the skin, and lodged in it among the men previous to their embarkation.

The most probable way, indeed, of accounting for the rise and production of these worms, is by supposing, that in a minute or embryo state (similar to what happens with the chigre) they penetrate the skin of persons who go exposed without any covering, than perhaps a hat, shirt, or trousers; as those who are properly clad, and wear stockings and gaiters, or boots, are never attacked: hence common seamen are liable to them, whilst their officers seldom or never suffer from them. This, in my opinion, clearly establishes the origin of the affection.

Intestinal worms possibly may be produced by an internal use of certain waters, or mucilaginous vegetables, but that those in question can arise from such a cause cannot readily be admitted; for after being received into the stomach by drinking the water in which they are contained, they must become mixed with the chyle, enter the blood in a living state, and finally be deposited in the cellular membrane and interstices of the muscles to be afterwards hatched, and produce the living dracunculi. In my opinion, they can only be caused by the embryo worms insinuating themselves into different parts of the body; and having formed a nidus, in due time acquire a considerable size. Several persons being exposed to their influence may become diseased, and induce us to suppose

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* See No. xlii. of the Edinburgh Medical and Surgical Journal, p. 151.

that the complaint is of an infectious nature, but which certainly is not the case.

The patient is usually sensible of an itching in the part or parts at first; and on a narrow inspection a small bladder or blister may often be observed. The Guinea-worm does not produce, however, any acute pain, until it is near a state of maturity; at which period the part in which it is lodged becomes swelled, inflamed, and very painful to the touch, and bears a strong resemblance to a boil which is not much disposed to suppurate. The tumour, after having remained in an indolent state for a considerable length of time, breaks at last, and then the head of the worm may be perceived protruded from the orifice; which, continuing to push a little forward every day, may at last be laid hold of with ease.

No injurious consequences attend on the disease when properly treated, although, when the inflammation is very considerable, there is often much fever present; but by breaking the worm, from being in too great a hurry to extract it, large abscesses and ill-conditioned ulcers are sometimes formed. In a few instances mortification has ensued, and very large sloughs have been cast off; alarming hæmorrhages have also occurred. Frequently after extracting one worm from a patient, a second, or a third, or even a fourth will appear; and after getting one out of the leg, another may be observed in one or both hands, or in the other leg.

While the tumour remains in a hard indolent state, it will be necessary to keep an emolient poultice constantly applied to it, in order to bring it to a speedy and proper suppuration. When it breaks, and the head of the worm protrudes so far as that it can be laid hold of with ease, a piece of cotton rolled up like a quill is then to be tied to it, and as it advances it is to be daily twisted gently round, until the whole is extracted, using at the same time the greatest precaution that it may not be broken. The wound is then to be covered with dry lint, over which is to be laid a pledget of tow, spread with the ceratum resinæ.

We are informed, by Sir James M'Gregor, that the native practitioners are much more successful in getting out the worms than Europeans. After long feeling with their fingers for the body of the worm, they make an incision as nearly as they can judge over its middle, and pulling the worm by a duplicature of it, draw out both ends at one time.

In the treatment of the Guinea-worm, mercurial ointment has by some surgeons been rubbed on the parts affected, and electrical shocks have been passed through the tumours, but without any good effect. An internal use of medicine is necessary only where the inflammatory symptoms run high, and the cooling purgatives, with the rest of the antiphlogistic plan, must be resorted to. We are told by Dr. Chisholm,* that an internal use of mercury is

* See the Edinburgh Medical and Physical Journal, No. xlii.

highly necessary; and in order to destroy the insect or its ova, the remedy must be employed so as to pervade the system. In the many cases which came under my care during my practice in the West Indies, perfect cures were, however, effected without the use of mercury.

As the malady has been said to spread from a neglect of cleanliness, the greatest attention should be paid to ventilation and frequent washings and fumigations, in all situations where it makes its appearance. Those who may be unavoidably exposed to its influence should bathe often in the sea or some river.

ORDER VII.

DOLOROSI. PAINFUL AFFECTIONS.

CEPHALALGIA, OR HEADACH.

THIS affection is, in some instances, general over the whole of the head; at other times it is confined to a particular side; and now and then cases occur where the pain occupies so small a part, that it may readily be covered with the end of the finger, which has been called clavis hystericus.

The causes which give rise to the headach are most usually indigestion, foulness, of the stomach, the hinderance of a free circulation of blood through the head, long exposure to the sun, translations of gouty and rheumatic matter from other parts of the body, the stoppage of some long-accustomed evacuation, inebriety, and lastly, too great a determination of blood to the head. Headach is, however, more frequently a symptomatic affection than a primary one, and often arises in consequence of a fever, or of hypochondriasis, hysteria, or some other nervous disease.

The symptoms which attend on a pain in the head usually vary according to the cause which has produced the complaint.

Where a headach is symptomatic of some other disease, it will be likely to cease on a removal thereof, as in the case of fever. Where the pain comes on suddenly, is acute, and attended with a noise in the ears, giddiness, and a loss of speech, it denotes an attack of apoplexy or palsy. When it arises in hypochondriacal or hysterical persons, is very acute, and accompanied with much throbbing of the temporal arteries, it is apt to terminate in madness. A headach proceeding from some fixed nervous affection, is difficult to be removed entirely, and the patient is liable to frequent returns of it.

Between the head and stomach there is a great sympathy; wherefore it happens, that where there is a foulness in the stomach,

the head is frequently affected with pain. Where such a cause is apprehended to exist, it will by all means be advisable to give a gentle emetic; and if any costiveness prevails, this should be removed by some proper laxative.

Where the disease proceeds from an over-fulness of the vessels, or from too great a determination of blood to the head, a proper quantity may be drawn off by opening the jugular vein on the side most affected, or by the application of several leeches to the temples; the patient afterwards taking care to use a spare regimen, to keep his body perfectly open, and to wear nothing tight about his neck. Those who are of a full plethoric habit of body, and who are troubled with severe and frequent attacks of the headach, will act prudently in having recourse to scapulary issues. To alleviate the pain at the time, linen cloths wetted in vinegar and water, or in camphorated spirits, may be applied to the forehead and temples.

When a headach arises from a translation of gout or rheumatism from some other part, it will be advisable to excite a slight inflammation in the extremities by the application of small blisters; and at the same time to open the body by administering some stomachic purgative, as the tinctura rhei composita.

If a venereal taint is the cause of the headach, recourse must be had to mercury, as advised in syphilis.

In the headach which arises as a consequence of some nervous affection, the most proper medicines will be valerian, camphor, castor, assafœtida, and æther, together with cinchona bark, and steel: which may be administered as recommended in hypochondriasis, hysteria, and dyspepsia. Rubbing the temples from time to time with a little æther may also have a good effect.

The habit is to be rendered at the same time more robust by gentle and regular exercise every day in the open air; by a diet consisting chiefly of animal food, with a moderate quantity of wine, and by great regularity as to the hours of rest and rising, and likewise of meals.

Where a headach is attended with great pain, long want of rest, and a slight delirium, we may venture to give opiates in a considerable dose, provided proper evacuations have been premised.

Should we have reason to suppose that the headach has proceeded from a stagnation of serum in the vessels, or on the membranes of the head, perpetual blisters, issues, and mercurial purges, will then be necessary; and along with these we may employ errhines, such as the pulvis asari compositus.

In periodical headachs, we are informed by the late Dr. Fowler of Stafford, that he experienced the most happy effects from giving the solution of arsenic, as mentioned in the treatment of intermittent fevers. The best way in such cases will be, to begin with about three drops, repeated twice a day, and so to increase the number gradually to eight or ten.

The extractum belladonnæ has proved singularly successful in

a great number of complaints of the head, whether resembling tic douloureux, or partaking of an intermittent form. Small doses of one or two grains, repeated every two hours, during a continuance of the pain, have been sufficient. The patient should always be apprised of the probable conseque ces to vision and the other faculties, which may ensue from a use of this medicine.—See Tic Douloureux.

ODONTALGIA, OR TOOTHACH.

THE toothach consists in an acute pain in one or more of the teeth; but most generally it originates in one, and from that is diffused to the adjacent parts.

A caries of the tooth itself, acted upon by different irritating causes, such as the application of cold, or some acrid matter, is the most usual cause of this complaint; but in some cases it would seem to proceed from a rheumatic affection of the muscles and membranes of the jaw; and here the whole side of the face will be affected. When it takes place in pregnancy, it is to be considered as arising either from an increased irritability or from sympathy.

It may be presumed, that the acrid matter which occasions the toothach is produced by some vice that originates in the tooth itself. In some instances, the caries appears first upon the external surface or enamel of the tooth, in one or more spots which are superficial; but in others it commences in the internal surface, or bony part; the former is, however, by far the most frequent. The caries, by spreading and corroding deeper, at length penetrates the substance of the tooth; and the external air, and other matters, getting into the cavity, stimulate the nerve, and thereby excite the toothach.

The most effectual cure for this disease is extraction of the carious tooth: but as this in some cases may not be advisable, and in others might be strongly objected to by the patient, it will often be necessary to substitute palliative means.

To relieve the urgency of pain in those cases where there is an opening made into the substance of the tooth by the caries, it is usual to introduce either cotton impregnated with substances of a caustic nature, such as the essential oil of cloves, cajeput, nutmeg, &c. together with sulphuric or other mineral acids, or a small pill composed of opium and camphor. In some instances the actual cautery has been employed to destroy the sensibility of the nerve.

To prevent a return of the pain when it has ceased, the hole in the tooth should be widened within by a proper instrument, and then be stopped with leaf gold, or leaf lead, by which operation it may often be preserved for many years without any further inconvenience to the person.

These are the remedies and means to be made use of when the disease is confined to a single tooth; but when the neighbouring parts become likewise affected, or there is no access for such an application to the nerve, in consequence of the tooth having no cavity in it, other measures are to be adopted.

Exciting an irritation in the neighbouring parts, by means of blisters applied behind the ears, or by rubbing the jaws with some kind of rubefacient liniment,* and afterwards keeping them warm with flannel, has often afforded much relief, in cases where the pain is somewhat diffused.

Promoting an increased excretion from the salivary glands, by means of pungent masticatories, such as horse-radish, scurvy-grass, ginger, and pellitory-root, has likewise been adopted in similar cases with much advantage.

In those rheumatic affections of the maxillæ to which many persons are subject under certain states of the atmosphere, and in which the pain is not confined to any one tooth, but occupies the whole jaw, the pyrethrum has often been peculiarly useful. When the tenderness or tumour of the gums renders the mastication of the root impracticable, a piece of lint, moistened in the tincture, prepared as below,† may then be applied to the most painful part, renewing it as the occasion may require; or one of the pills here advised‡ may be held in the mouth until dissolved.

Washing the teeth every morning with a soft brush or piece of sponge dipped in clear water, frequently removing the tartar from off them, and making use of some absorbent testaceous powder‖ reduced to a very fine consistence, twice or thrice a week, are the

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* 1. ℞ Liniment. Ammon. Fort. f. ℥j.

Vel,

2. ℞ Spirit. Camphoræ, f. ℥j.
Liquor. Ammon. f. ℥iij.

Essent. Ol. Bergam. ♏ x. M.

† 3. ℞ Pulv. Rad. Pyrethri, ℥x.

Spirit. Rectf Oj.
Infund. per dies decem et cola.
Postea adde
Camphoræ. ℥j.
Gl. Rosmarin. f ℥ss.
Tinct. Opii, f. ℥ij. M.
Fiat tinctura.

‡ 4. ℞ Pulv. Rad. Pyrethri, ℥j,

Mucilag. Gum. Acaciæ, q. s. M.

Fiant pilulæ xij.

‖ 5. ℞ Bol. Armen.
Corn. Calcinat. ää ℥ij. M.

* 1. Take Strong Liniment of Ammonia, one ounce.

Or,

2. Take Camphorated Spirit, one ounce.
Solution of Ammonia, three drachms.
Essential Oil of Bergamot, fifteen drops.
Mix them.

† 3. Take Pellitory of Spain, powdered, ten drachms.
Rectified Spirit, one pint. Let them infuse for ten days, then add
Camphor, one ounce.
Oil of Rosemary, half a drachm.
Tincture of Opium, 2 drachms.
Mix them

‡ 4. Take Powdered Pellitory of Spain, one drachm.
Mucilage of Gum Acacia, a sufficiency.
Mix them, and form 12 pills therefrom.

‖ 5. Take Bole Armenic,
Burnt Hartshorn, of each two drachms.
Mix them for a dentrifice.

best means for preserving the teeth. Where the patient is of a scorbutic habit, and the gums inclining to softness and sponginess, they may be washed now and then with what is here advised.*

Charcoal reduced to a fine powder is an excellent dentrifice, and by washing the mouth with a little of it diffused in water, it immediately takes away the bad smell from decayed teeth. A lump of the charcoal should be put a second time into the fire till it is red-hot, and when it becomes cool again, the external ashes are to be blown off, and it is to be immediately reduced to a fine powder in a mortar, and kept close stopped in a phial for use.

Tinctures composed of mineral acids diluted, and concealed under various artifices and gritty substances, tinged of divers colours, are vended in the shops under pompous names, as dentrifices; but although they give a whiteness to the teeth, they nevertheless prove highly pernicious to the enamel, and ought therefore to be used with great caution.

FACIEI MORBUS NERVORUM CRUCIANS, OR PAINFUL AFFECTION OF THE NERVES OF THE FACE.

THIS is one of the most painful chronic complaints to which the human frame is subject; and although of rare occurrence, still practitioners have now and then the misfortune to meet with it, and to deplore the severe sufferings of the patient, and, in some cases, the inefficiency of any aid from medicine. It is the trismus dolorificus of Sauvage, or tic douloureux, by which name it is vulgarly known; but as the one which has been applied to it by a late writer† is more accurate and expressive of its real nature, I have been induced to adopt it. The term neuralgia facialis has been employed by a French nosologist of the present day, which indeed indicates with accuracy and precision the leading characters of the disease, and is at the same time consistent with a correct and philosophic nomenclature. A late writer,‡ in his Thesis, has nearly adopted the same appellation.

Dr. Fothergill‖ seems to have been the first author who noticed the disease; since which we have been furnished with some remarks on it by Dr. Haighton, in a paper inserted in the Medical Records and Researches: as likewise by Darwin in his Zoonomia. By some it has been supposed to be owing to a

† See a Systematic Account of this Disease, by S. Fothergill, M. D.
‡ — a Dr Kerrison's Thesis de Neuralgia Faciei Spasmodica.
‖ Medical Observations and Inquiries, vol. v.

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*6. ℞ Tinct. Cort. Cinchonæ, f. ℥ij.	* 6. Take Tincture of Peruvian Bark, two ounces.
—— Myrrh. f. ℥ss. M.	—— Myrrh, half an ounce. Mix them.

cancerous acrimony, but we may with greater reason attribute it to a diseased state of the nerves of the face or their covering. Its true cause has not however been satisfactorily ascertained, but it is generally supposed that the several ramifications of the second branch of the fifth pair of nerves are the parts chiefly affected by it. Rheumatic and gouty irritation may sometimes be the real source of neuralgic affections.

The most frequent seat of the affection is the nerves over the cheek-bone, just below the orbit; the alæ of the nose, upper lip, teeth, and gums. When this is the case, it will be found to proceed from the second branch of the fifth pair of nerves, the superior maxillary nerve, which passe through the foramen rotundum, and whose branches are chiefly distributed to those parts. Sometimes the forehead and temple and inner canthus of the eye, and even the globe of the eye itself, are first affected, from the first branch of the fifth pair, the ophthalmic branch being the subject of the disease; and as there are some cases recorded in which the patient suffered much from an effusion of tears, it might probably arise from that branch of the ophthalmic which goes to the lachrymal gland being the seat of the disorder. When the lower jaw and tongue are affected in addition to the parts already named, the third branch of the fifth pair, or lower maxillary nerve, is diseased. Perhaps as frequently as any of these nerves is the portio dura of the seventh pair diseased; it gives off branches to most parts of the face, and they communicate with several of those of the fifth pair. The distinguishing mark of its being affected is, that besides the parts already enumerated, we find pain in the ear, the mast id process, and the angle of the lower jaw. The disease is then chiefly confined to the fifth pair of nerves, of which most frequently the second branch only is affected, and the branches of the portio dura of the seventh pair. From the intimate connexion, however, of most of the branches of these nerves with each other, the disease seldom continues long without extending its ravages; and, in very inveterate cases, all the nerves may possibly be affected. Neuralgic pains are not however confined to different parts of the head, but have been met with in other portions of the body, such as the breast, side, and calf of the leg.

The only diseases with which tic douloureux can be confounded are rheumatism, hemicrania, and toothach. It is to be distinguished from the first of these by a paroxysm being excited by the slightest touch, by the shortness of its duration, and the extreme violence of the pain. Neither are the symptoms similar; for in rheumatism, if acute, there is fever with redness and increased heat in the affected part, and generally some degree of swelling; if chronic, the pain is obtuse, long continued, and often increased at night; whereas none of these symptoms usually occur in the morbus crucians faciei.

From hemicrania it may clearly be distinguished, by the circum-

stance of the pain in tic douloureux accurately following the ramifications of the affected nerve; and

It may be known from the toothach by the shortness of the paroxysm and the rapidity of its succession, and during the interval an entire freedom from all pain; the seat of the pain, and its darting in several directions, according to the particular nerve affected, with an acuteness and poignancy differing from that of the toothach, which seems to strike deep,—while the pain of the morbus crucians faciei is always more superficial and infinitely more lancinating; and, lastly, the convulsive twitchings, which, though not always present, are very frequent, and are never experienced in odontalgia.

Neuralgia faciei spasmodica commonly arises in persons of a delicate irritable habit, at that period of their lives when the bodily strength begins to give way,—for the most part between the fortieth and fiftieth year, but it has occurred at all ages, and in the strong as well as the debilitated, and is excited into action by exposure to a cold and humid atmosphere, by great fatigue, by external violence, and by uneasiness of mind.

Stimulating and anodyne embrocations, blisters, moxa, topical bleeding by means of leeches, frictions with mercurial ointment,* as also the tartrate of antimony, preparations of quicksilver, particularly the submuriate, given in combination with opium in doses sufficient to exhibit a decided constitutional influence,† the application of ice or very cold water, and electricity, have been resorted to in the palliative treatment of neuralgia facialis: and the arsenical solution, extracts of hemlock, stramonium, hyoscyamus, and opium, in considerable doses, frequently repeated, as well as being applied externally in the form of liniment, the extract of cinchona,‡ in very large doses, the sulphate of quinine, and the different medicines usually administered in nervous complaints, have at the same time been given internally with some temporary relief.

In some cases of tic douloureux which had resisted the effects of the arsenical solution, the nitrate of silver, the extract of henbane in considerable doses, and opium, the ferri subcarbonas is reported‖ to have been employed with very great success. It was given in doses of two scruples to a drachm, repeated two or three times a day.

A severe case of the disease in a gentleman of about sixty years of age lately came under my care, wherein I was induced to make trial of this medicine, owing to a failure of the cinchona, arsenical solution, and every other means that had been adopted

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* See vol iii. p. 272 of the Edinburgh Journal, for a case of tic douloureux successfully treated with mercurial ointment so as to excite a copious ptyalism.

‡ See vol. iv. p. 306 of the same Journal.

— vol vii. p. 331 of the New Med. and Phys. Journal.

‡ See Dr. Kerrison's Inaugural Thesis de Neuralgia Faciali Spasmodica.

‖ See Cases of Tic Douloureux successfully treated, by Mr. B. Hutchinson.

prior to my being consulted; and it is an undoubted fact that the malady soon ceased, and has not again returned, although a length of time has elapsed since its removal.

It appears from the report of a late writer,* that the most certain and powerful remedy which he has employed in this excruciating disease is belladonna. In many cases recorded by him which were attended by excessive pain, and which had resisted every means before tried, this medicine proved effectual. From two to three grains of the extract, or from twenty to forty minims of the tincture, in any vehicle, were administered every four or five hours during the severity of the paroxysms to adults, but the dose was considerably lessened when ease was procured. It appears that the use of belladonna is, however, accompanied by some distressing symptoms, such as giddiness in the head, impaired vision, numbness, tightness in the chest, and a sense of dryness in the throat and suffocation, when given in such doses as to produce a certain effect; but these soon cease on diminishing the dose, or wholly discontinuing the medicine.

It appears then, that belladonna exercises a striking and powerful influence over those chronical sympathetic irritations that particularly belong to the head and face, which harass and distress the sufferer to an almost interminable length, and which hitherto had shown nearly an unyielding obstinacy to the power of every medicine. Besides the internal use of belladonna, a tincture of it has been employed as an external application in some cases with advantage.

By comparing the success which has followed the exhibition of the different remedies which have been employed in neuralgia faciei spasmodica, it appears that a decided preference is due to the subcarbonate of iron, belladonna, and sulphate of quinine; the latter being a medicine highly spoken of by the physicians in France, and administered by them in doses of from sixteen grains to a scruple in the twenty-four hours.

It has been attempted to exterminate this painful affection in some instances by a division of the nerve; and the operation is fully justified by the extreme acuteness of the disorder, and by some degree of success that has attended this mode of treatment. It is well known, however, that the operation, although a radical cure in the part immediately affected, does not always prevent a recurrence of the pain in the collateral branches of the nerves; and therefore, previous to having recourse to it, we should consider whether the nerve or nerves can be divided between the part where the pain originated, and the parts to which it afterwards extended. When this can be done, there will be a probability of operating with success; but when several parts are attacked at the same time, or where the

† See Observations on the use of Belladonna in Painful Disorders of the Head and Face, by Mr. John Bailey.

pain extends in several directions from the part primarily impressed, there will be but little reason to expect advantage from an operation.

When the portio dura of the seventh pair (which is distributed very extensively upon the face under the name of pes anserinus) is the seat of the disease, and which may be ascertained by the patient complaining of a pain that begins in the forepart of the cheek, sometimes as high as the forehead, and extends itself in the direction of the ear, no relief whatever can be obtained by dividing the second branch of the fifth pair, as such a division cannot possibly give any interruption to the communication between the sensorium and the seat of irritation.

Paralysing the nerves by the application of cerussa, succeeded in a case* under the care of Sir Astley Cooper, that had resisted every other remedy, and even the knife. Two scruples of this, formed into an ointment, were rubbed in the morning on the affected cheek, about an hour before the paroxysm was expected. The application was continued for a month or more, and the patient (who was a man) left the hospital apparently perfectly cured. The effect of the lead is reported to have been rapid and striking, the person being rendered comparatively comfortable in a short time, from a state of excruciating torment. No particular effect was produced by cerussa on the stomach or bowels.

It has already been observed, that tic douloureux is pretty generally supposed to be primarily seated in the nerves of the face; but a modern writer thinks, however, that it has its origin in the brain, to which the affection of the face merely stands in the relation of an effect. This opinion, he says,† has been impressed upon his mind by a careful examination of the cases which have fallen under his eyes; in the whole course of which the affection of the face was preceded and attended by clear manifestations of cerebral disease, such as pain, giddiness in the head, confusion, or some other uneasiness in the head, more or less disorder in the functions of some of the external senses, with symptoms of congestion, or of increased action in the vessels of the brain, and sometimes the stomach and liver were simultaneously or sympathetically affected,—a circumstance not uncommon in many diseases of the sensorium.

Forcibly struck with the appearances that indicated the seat of the malady in question to be in the brain, the physician alluded to resolved to try the power of decided bleeding, both general and local, and purging. In many cases of a recent nature, this plan, we are told, succeeded without any other aid. In one of much longer standing, the plan was followed up by opium and

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* See Mr. Bedingfield's Compendium of Medical Practice, chapter xii.

† See Practical Illustrations of Typhus and other Febrile Diseases, p. 212, by Dr. Armstrong.

the submuriate of mercury combined together. The occasional application of a blister, either to the scalp or nape of the neck, might be likely, he supposes, to assist the use of purgatives, and the depletion by general and topical bleeding.

From a consideration of all the circumstances attendant on tic douloureux, Dr. Parry* has likewise been induced to attribute this painful affection to increased vascularity, or determination of blood (amounting perhaps to inflammation,) to the neurilema or vascular membranous envelope of the facial nerves, or of the second or superior maxillary branch of the trigeminus. Of course the plan of treatment advised by him is depletion by general and local bleedings.

GASTRODYNIA, OR PAIN IN THE STOMACH.

THIS disease often occurs in those who are afflicted with dyspeptic symptoms, such as heartburn, eructations, flatulency, &c.

In addition to what has been mentioned of these complaints under the head of Dyspepsia, it may be proper to notice that cardialgia and gastrodynia originate from an inactivity of the stomach, whence the aliment, instead of being concocted by digestion, and converted into chyle, runs into fermentation, producing acetous acid. Sometimes the gastric juice itself becomes so acid as to give pain to the upper orifice of the stomach; and it is probable that violent cardialgia is more frequently owing to an increase of the acidity of the gastric juice than to the acetous acid produced by fermenting aliment.

The heartburn, as arising from indigestion, is often an afflicting and pertinacious complaint, being not unfrequently attended with an emaciation of the body from the want of sufficient chyle. To obtain a temporary relief, we must have recourse to antacids, calcareous earths, alkaline salts, the aerated alkaline water, or Seltzer water. To check the fermentation in severe cases, we may employ the sulphuric acid in a diluted state, together with a due quantity of brandy or other spirit lowered with water: but for the purpose of procuring a permanent relief, we should endeavour to strengthen the digestion by the stimulus of a blister externally, and by the use of aromatics, bitters, and chalybeates, internally, as advised under the head of Dyspepsia.

The diet should consist of such things as do not easily ferment, such as animal food, shell-fish, and biscuit. It appears by the experiments of Pringle and M'Bride, that the saliva swallowed along with our food greatly prevents its fermentation; and therefore dyspeptic persons should be particularly careful in well masticating what they eat.

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* See his Elements of Pathology and Therapeutics.

Flatulency is to be obviated by carminatives and a due observance of the means just mentioned. Perhaps a waiscoat made so tight as slightly to compress the stomach and bowels, might prove serviceable in assisting the digestive process.

In gastrodynia attended with acute pain in the organ, we must have recourse to antispasmodics, particularly æther and opium, in combination with stomachic bitters and chalybeates.

The oxyd of bismuth is a remedy which is reported to have been employed with considerable advantage in gastrodynia—(see Dyspepsia.) The proper dose is from three to ten grains, with about twenty-five grains of gum tragacanth, repeated three times a day. We had better, however, begin with a dose of three grains, and so increase it gradually. I have myself used it with advantage in some cases.

SPRAINS.

Accidents of this nature happen most frequently in the wrists, knees, and ankles; and are usually occasioned by a slip, or some sudden effort or violent exertion.

Sprains of the tendons and ligaments are usually productive of an immediate painful and inflammatory swelling. In severe sprains there is often not only an increased action of the arteries in the inflamed part, but there is likewise an instantaneous effusion from the rupture of some of the small vessels. In general, we may suppose the effusion to be of the serous kind, as the skin is not altered in colour for some time after the accident: but it sometimes happens that the tumid parts are either of a deep red or leaden colour from the very first, owing to blood being extravasated from the ruptured vessels.

In the treatment of sprains, two circumstances are principally to be attended to: the first, to prevent, by all possible means, the swelling from arriving at any considerable magnitude; the second, to employ those remedies which are known to be powerful in removing inflammation.

To answer the first of these intentions, restringent applications, such as vinegar, ardent spirits, and the lees of red wine, may be made use of. By immersing the injured part in any of these immediately on receiving the injury, the effusion will be rendered much less than it otherwise would be, and may perhaps be altogether prevented. Plunging the sprained limb into the coldest water that can be procured as soon after the accident as possible, is often attended with the best effect, and may be advised as the first step, till one or other of the articles just mentioned can be procured.

To answer the second intention, of removing inflammation, we may have recourse to local blood-letting by the application of several leeches to the tumid part; and if the pain and inflamma-

tion do not subside readily, they may be applied again the next day. Should any degree of fever attend in consequence of the violence of the sprain, opiates, together with refrigerants, and the remedies which prove useful in other inflammations producing fever, ought to be administered.

In cases where the accident is trifling, or after blood has been drawn off from the part affected, we may apply a solution of the plumbi acetas or liquor plumbi subacetatis properly diluted, by keeping linen cloths dipped in either of them constantly to it throughout the course of the day. At night, a poultice consisting of oatmeal and linseed meal mixed up with vinegar, may be laid on. This last, however, will not be essentially necessary, except where much tension and pain are present.

With these and such other discutient applications,* proper rest will be necessary for the limb, which never should be kept in a pendent position.

Where a weakness remains in consequence of a sprain, pumping cold water upon the part every morning, and wearing a calico bandage for a considerable length of time, as a support to it, will be the best means to pursue.

LITHIASIS, OR THE GRAVEL AND STONE.

THESE diseases depend upon a peculiar disposition of the fluids, and more particularly the secretion of the kidneys, to form a calculous matter; and have been supposed to be owing to the presence of an acid principle in them, termed the uric acid, which seems confirmed by the benefit derived from a course of alkaline medicines. Uric acid is indeed one of the essential elements of the urine of a person in perfect health, and not an accidental or diseased produc-

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* 1. ℞ Liquor. Ammoniæ Acetatis,
Liniment. Saponis, āā f. ℥j. M.

Vel,

2. ℞ Liniment. Camphoræ,
Liquor. Ammon. Acetat. āā f. ℥j.
Tinct. Opii, f ℥ss. M.

Vel,

3. ℞ Ammoniæ Muriat. ℥ij.
Acidi Acetici dilut.
Spirit. Rectific. āā Oss. M.

Vel,

4. ℞ Olei Succin.
Tinct. Opii, āā f. ℥ij.
Adipis Præpar. ℥j. M.
ft. Linimentum.

* 1. Take Solution of Acetate of Ammonia,
Soap Liniment, of each 1 ounce.
Mix them.

Or,

2. Take Camphor Liniment,
Solution of Acetate of Ammonia, of each one ounce.
Tincture of Opium, half an ounce.
Mix them.

Or,

3. Take Muriate of Ammonia, 2 drachms.
Distilled Vinegar,
Rectified Spirit, of each half a pint.
Mix them.

Or,

4. Take Oil of Amber,
Tincture of Opium, of each two ounces.
Prepared Lard, one drachm.
Mix them. To be used as a liniment.

tion of the animal economy: in the healthy state it is wholly dissolved in the urine; and in gravel, a portion of it is deposited in the form of sand or calculi in the cavities destined to collect and evacuate the fluid secreted by the kidneys. A long use of fermented liquors, and of wines abounding with tartar, may possibly in some constitutions prove occasional causes of the gravel and stone.

It has also been long supposed that water impregnated with sulphate and carbonate of lime, constituting what is called hard water, predisposes persons to be afflicted with the gravel and stone; but Dr. Henry, in his excellent Thesis, looks upon this opinion as an unfounded prejudice. Instances have been adduced where a stone has arisen from the accidental introduction of some substance in the bladder, thereby forming a nucleus. That a morbidly increased secretion of gravelly matter frequently occurs independent of external causes, we have the most satisfactory proof in the hereditary disposition of many families to this complaint. An excess of uric acid is generally supposed to be the proximate cause of the formation of sand and calculi, and this excess will much depend on the mode of life and kind of diet adopted by the patient. All substances containing azote furnish matter for the formation of uric acid* into which it is readily transformed, and tends to the production of gravel. The use of animal food and other analogous aliments tends to diminish the quantity of urine at the same time that it increases the proportion of uric acid, whereas a vegetable diet has the contrary effect.

Those who are in the decline of life, and who have been much engaged in sedentary employments, as likewise those who are much afflicted with the gout, are in general very subject to nephritic complaints; but it is a matter of notoriety that the period of life from infancy to about fifteen years, is most subject to the formation of calculi in the bladder, and that the children of the poor are afflicted in a greater proportion than those of the opulent. From the difference in the structure of the urinary passages in the sexes, men are much more liable to them than women. In warm climates we seldom meet with instances of calculous concretions forming of any size either in the kidneys or bladder, as the particles of sand deposited from the urine usually pass off before they can adhere together, owing to the relaxed state of the parts; but in cold ones they are found frequently of considerable magnitude.

Excess of urea is not unfrequently met with, especially in children and persons depositing the phosphates. In these cases, the urine is generally pale, but sometimes high-coloured, like porter and water mixed. When recently voided, it reddens litmus paper, and is for the most part free from sediment. Nitric acid produces speedy crystallization, and then an abundance of urea is

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* See Dr. Magendie's Physiological and Medical Researches into the Causes of Gravel.

discovered. There is reason to suppose, that in some instances an excess of urea has been confounded with diabetes insipidus, though differing greatly from that disease.

Where urea is in excess, there is usually a frequent and almost irresistible desire of voiding the urine, but this does not arise from a fulness of the bladder: for in general, only a small quantity is voided at one time, but from the frequency, the total quantity voided in a given time not being greater than natural. In cold weather the quantity is augmented, and it is also increased by all causes producing mental agitation. There is often a sense of weight, or dull pain in the back, and an occasional irritation about the neck of the bladder, which now and then extends along the urethra. The pulse, however, is not affected, and the tongue is clean: there is no remarkable thirst, nor are the functions of the stomach and bowels much deranged.

A fit of the gravel is attended with a fixed pain in the loins, numbness of the thigh on the side affected, nausea and vomiting, and not unfrequently with a slight suppression of urine. As the irritating matter removes from the kidney down into the ureter, it sometimes produces such acute pain as to occasion faintings and convulsive fits. The symptoms often resemble those of nephritis; but the deposition of reddish-brown sand, or very fine powder of the same colour, in the urine on becoming cold, will demonstrate the difference.

When gravel has once formed in the pelvis of the kidney or elsewhere, it continues to increase by receiving on its surface new layers of uric acid successively precipitated; of which we may be convinced by cutting the concretions transversely, which enables us to perceive that they are almost entirely composed of concentric layers.

One of the principal diagnostic symptoms of calculus in the kidney is the dark appearance of the urine, as if it were mixed with coffee grounds, evidently depending on broken down particles of blood, proceeding from the obscure but continued irritation of the kidney. When this occurs in conjunction with a dull heavy pain in the loins, there can be very little doubt of the presence of calculus in the kidney. In mere inflammation of this organ, when no calculus is present, the urine does not put on the above appearance.

Disordered affections of the prostate gland are those which, without proper attention, are most likely to be confounded with stone in the bladder. One mark of distinction which the young practitioner will do well to attend to* is, that in the prostate affection, the pain experienced in making water will be always in the commencement of micturition, while on the contrary, it is most usually during the passage of the urine, or when the bladder is nearly emptied, that pains and obstructions are perceived in

* See Dr. Heberden's Commentaries.

cases of calculus. Another important diagnostic of stone is, that the irritation which it induces does not so much affect the general health as the same degree of local disturbance from other causes.

The symptoms which attend on a stone in the bladder are, a frequent inclination to make water, which flows in a small quantity, is often suddenly interrupted, and is voided towards the end with pain in the glans penis. The patient, moreover, cannot bear any kind of rough motion; neither can he make use of any severe exercise without enduring great torture, and perhaps bringing on either a discharge of bloody urine, or some degree of temporary suppression. With these symptoms he experiences pain in the neck of the bladder, tenesmus, itching and uneasiness in the anus, frequent nausea, and sometimes a numbness of one or both thighs, with a retraction of one of the testes.

The long-continued irritation of the coats of the bladder by the stone, produces a considerable thickening in their substance, but principally in the muscular coat, the packets of its fibres becoming large and incapable of that dilatation which they formerly possessed: their irritability, however, increases, so that they are excited to contract upon a few drops of urine, and thus, by pressing the stone against the part, already too sensible to pain, an almost constant state of suffering is kept up. The bladder in time becomes more diseased, the inner coat constantly inflamed, and sometimes ulcerated: all the unfavourable constitutional symptoms increase, and unless an operation is performed, whereby the stone is removed, the patient's sufferings are only ended by death.

A very interesting case is reported by Sir James Earle, in the Philosophical Transactions of the Royal Society for 1809, in which a calculus was found in the bladder larger than any of which we have an equally well-authenticated account. About ten years after the symptoms of calculus were experienced, lithotomy was performed, and the extraction attempted by Mr. Cline, at the particular request of the patient. A considerable quantity of fragments was removed, but the great mass of the calculus could not be extracted, and after a few days death ensued. On dissection, the bladder was found entirely filled, and even distended, by the stone: it weighed forty-four ounces, and was sixteen inches in length. It seemed to have completely occupied the cavity of the pelvis, and to have projected beyond and rested upon the pubes. The pelvis of the kidneys and ureters were much enlarged, and the latter appeared to have been the receptacles of the urine. The stone, on being analysed, was found to consist of the triple phosphate of ammonia and magnesia, with phosphate of lime mixed with an unusually large quantity of animal matter.

As all attempts to dissolve a calculus in the kidneys or bladder have hitherto proved ineffectual (whatever certain persons actuated by selfish motives may have alleged to the contrary), we are to consider the disease as capable of being removed in males only by lithotomy; an operation always attended with much danger, but

more particularly so where the patient is advanced in years, the disease complicated with any organic affection of the parts, and the general health considerably impaired. Under such circumstances it indeed never should be attempted.

In females, calculi of a moderate size, as likewise extraneous substances which have accidently escaped from the urethra into the bladder, have been extracted therefrom* by gradually distending the former by means either of sponge tents or a bougie, observing to increase its size every day until the urethra has become sufficiently distended to allow the introduction of a pair of forceps; or we may employ an instrument constructed on the plan of a speculum ani, to enlarge the urethra, which will have the advantage of permitting the urine to escape in the meantime: whereas the former are liable to the objection of causing many hours of pain and retention of urine, while lying in the meatus. A knowledge of the possibility of removing calculi from the female bladder in this way, is worthy of being here noticed, as it may induce many to make trial of a mild means, instead of resorting hastily to a severe operation. This method of extraction has indeed been successfully performed by Sir Astley Cooper and others.

One great advantage of this mode is, that it may be employed as soon as a small stone is discovered in the bladder, when it may be extracted with great ease, and at a time that a more dangerous, painful, and important operation would hardly be proposed.

In a work which professes to notice modern improvements it may be proper to mention, that another instrument for the extraction of small calculi from the human bladder has been submitted to the notice of surgeons, and indeed has lately been used with success in one or two cases, by Sir Astley Cooper; but, in my opinion, such a mechanical contrivance is not likely to be often available in practice, particularly in the male subject, and in certain cases that it may only afford a chance of multiplying the disease it is intended to remove. The length of the urinary canal in the male, its great irritability, and the impossibility of dilating it beyond a certain extent, will always present obstacles to the general adoption of this practice; and with respect to the plan of breaking down a large calculus in the bladder with the view of extracting it, the practice is condemnable, unless we are quite certain of getting away *all* the fragments. The instrument in question seems, however, well adapted to the abstraction of calculi from the female bladder, on account of the shortness of the urethra, and its being easily dilated.

To destroy calculi in the bladder, without having recourse to the formidable operation of lithotomy, another plan has been proposed,—I allude to the decomposition of those bodies by means

* See the 133th No. of the London Medical Journal, p. 147. — Medico-Chirurgical Transactions, vol. viii. p. 427.

of the galvanic pile; but our knowledge is not yet sufficiently extended to give a very favourable opinion of its ultimate adoption in the human subject, however successful it may have proved in dogs.

When the preference is given to a palliative mode of treatment in males, instead of resorting to lithotomy, or other modes of removal already noticed, we must in that case have recourse to lithontriptics: these will prevent the farther accumulation of calculous matter. Of the class of lithontriptics, the fixed alkali seems to be the most powerful, and has indeed been most generally employed. It may be used both in its caustic* and mild† state.

It has been satisfactorily ascertained, that in the majority of cases the nuclei of calculi originate in the kidneys, and that of these nuclei by far the greater number consist of uric acid: the good effect, therefore, so frequently observed from the use of alkalies, arises, not from any actual solution of calculous matter, but from the power which they possess of diminishing the secretion of uric acid, and thereby preventing the enlargement of the calculus, so that while of a very small size it may probably be voided by the urethra.

The alkaline aërated water is a preparation of the mild kind, which has been much extolled for its virtues in calculous and nephritic complaints, and is indeed pretty generally substituted instead of the liquor potassæ, and other active lithontriptics, the long exhibition of which is commonly attended with injurious consequences to the stomach. The quantity of the aërated alkaline water usually taken is about a gill thrice a day, viz. before breakfast, dinner, and supper. When the stomach will bear a greater quantity, an English pint may be taken in a day. If it proves cold to the stomach, or occasions flatulency, a tea-spoonful or two of brandy may be added. Should the irritation of the urinary passages be great, it probably may be of use to take a few drops of

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* 1. ℞ Liquor. Potassæ, ♏ xij.—xx. in jusculi cyatho ter in die.
Sensim augeatur dosis.

† 2. ℞ Sodæ Carbonat. ℈j.—℥ss. bis terve in die.

Vel,

3. ℞ Potassæ Aerati, ℥ij. bis die in Aquæ Distillat. Oss. solut.

Vel,

4. ℞. Pilul. Sapon. cum Opio, gr. viij. pro dos. mane et nocte.

Vel,

5. ℞ Liquor. Calcis Oj. in die cum Lacte Vaccino permixt.

Vel,

6. ℞ Aq. Supercarbon. Sodæ, Oss. bis terve in die.

* 1. Take Solution of Potass, from twenty to thirty drops three times a day, in a tea-cupful of broth. The dose may be somewhat increased gradually.

† 2. Take Carbonate of Soda, from one scruple to half a drachm twice or thrice a day.

Or,

3. Take Aerated Potass, two drachms, twice a day, dissolved in half a pint of Distilled Water.

Or,

4. Take Soap Pills with Opium, eight grains for a dose, morning and night.

Or,

5. Take Lime Water, one pint in the day, mixed with Milk.

Or,

6. Take Soda Water, half a pint twice or thrice a day.

the tincture of opium with each dose; but this ought to be discontinued as soon as there is an abatement of the pain. No particular diet or regimen is necessary to be observed while using this medicine, farther than abstaining from acids, butter, and fat meats.

Alkaline salts, although possessed of acrimonious properties in their separate state, are nevertheless rendered perfectly mild and inoffensive to the system by combining them with fixed air, as in the aërated water, and they are found by no means to lose their solvent quality. For the introduction of this water into medical practice, the world is indebted to Mr. Colbourne of Bath; since which its beneficial effects have been noticed and strongly recommended by Dr. Falconer, Dr. Percival, and other writers.

When the machine for preparing the aërated alkaline water, invented by Dr. Nooth, is not at hand, a medicine nearly similar may be prepared in the following manner: Dissolve grs. 20 of the subcarbonate of potass in two or three table-spoonsful of water, and add to the solution a table-spoonful of the juice of lemons. This mixture should be swallowed immediately, and is the proper dose, which may be repeated three or four times a day. It may, however, be doubted if the effects of this would be as powerful as the other. The method of preparing the aërated alkaline water with the machine invented by Dr. Nooth differs from that just mentioned, in adding to each pint of water in the middle of the glass of the machine, a quarter of an ounce of the fixed vegetable alkali.

The potassa aërata is a preparation of a somewhat similar nature, which is now used at St. Bartholomew's, and other hospitals, as a lithontriptic, and is given in the dose of two drachms dissolved in a pint of distilled water twice a day. It consists of half an ounce of the subcarbonate of potass, five drachms of distilled water, and one drachm of subcarbonate of ammonia. The potass being dissolved in a water bath, the ammonia is to be added, and when the effervescence is at an end, the mixture is to be set by to crystallize.

Dr. Duncan is of opinion that a solution of the supercarbonate of soda in pure water (in the proportion of four scruples to a pint), is preferable to the aërated soda water, on account of the carbonic acid gas not being disengaged on exposure to the atmosphere. On the addition of a small quantity of lemon or tartarous acid, a very pleasant effervescence is produced. The carbonate of soda, by being combined with an excess of carbonic acid gas in this preparation, is rendered not only more pleasant to the taste, but less liable to offend the stomach; and Dr. Duncan thinks it is the only form in which the soda can be exhibited in sufficient doses, and for so long a continuance, as to derive much benefit from its use in calculous complaints.

Where alkalies fail to relieve the increased secretion of uric acid, and to prevent its forming calculi in the kidneys, and where they disagree with the stomach, magnesia has been found generally

effectual;* and it may be persevered in for a considerable time without inconvenience, where the tendency to form uric acid remains.

Muriatic acid, given in doses of twenty or thirty drops three or four times a day, diluted with water, has been found, in several cases where gravel was expelled from the bladder, to afford much benefit, and to appease the pain in micturition.† It is moreover said to have proved a powerful lithontriptic. The constant and uniform effect of the medicine after a few doses, is stated to be the appearance of a considerable quantity of calculous sediment in the urine. In one instance two ash-coloured concretions were passed from the bladder. In both the fusible and bone-earth calculus it will certainly prove an excellent remedy, but it will be of no use in the uric acid calculus, as the reader will observe by perusing a little further.

It has long ago been observed, that gravelly or sabulous matter forms a constituent part of all urine; that it is kept in chemical solution in this fluid, and is eliminated by it out of the system. This matter was proved by chemists to be of an acid nature, and to be possessed of peculiar properties. By Scheele it was denominated lithic acid, but more significantly by Dr. Pearson, uric acid, as pointing out its origin. The composition of different calculi, however, has been shown to be very different. Dr. Wollaston has particularly designated four species: 1st, the fusible calculus, consisting of phosphoric acid, magnesia, and volatile alkali, and hence called by Fourcroy the ammoniaco-magnesian phosphate; 2dly, the mulberry calculus, consisting chiefly of the oxalate of lime; 3dly, the bone-earth calculus, made of phosphate of lime or animal earth; and 4thly, the uric acid calculus. Calculi of the latter kind are, however, of far more frequent occurrence than the other sorts. The uric acid, or gravelly matter contained in urine, is partly deposited on cooling; but (unless where it is in unusual quantity) commonly requires for the purpose one, two, or three days, or till a beginning decomposition takes place.

The nucleus of a calculus from the bladder is most usually formed of uric acid, proving it of renal origin: more rarely the nucleus is agglutinated ammoniaco-magnesian phosphate. The most rare is the mulberry calculus, frequently consisting throughout of the oxalate of lime, as has already been observed. Where an extraneous body forms the nucleus, the surrounding depositions are generally mixtures of the phosphates. Those calculi that are formed of uric acid, are distinguished by their red or dark yellow colour, being sometimes of a smooth, but generally rough surface. Those composed of a combination of uric acid with ammoniaco-magnesian phosphate, are of a pale or gray colour, smooth, not

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* See Observations on this subject in the Philosophical Transactions, by Mr. Brande.
† See Memoirs of the Medical Society, vol. v. article 8; and vol. vi. article 80.

unfrequently crystalline surface. Those composed of oxalate of lime are known by the protuberances and irregularities of surface, (whence the name of mulberry calculi,) superior compactness, weight, and dark colour.

Dr. Wollaston, in noticing four species of calculus, has at the same time pointed out the means of distinguishing one from the other, when even a small fragment can be procured for chemical examination.* The uric acid calculus is soluble out of the body in very weak alkaline preparations, and also in lime water, but not acted upon by muriatic acid. The fusible calculus is partly soluble in water, highly so in the carbonic acid, and consequently more so in the weakest possible acid impregnations that can be employed; nothing more being necessary for the purpose than the addition of so many drops of weak muriatic acid as will scarcely impart an acid taste. The moriform calculi are the most difficult of solution, and are not acted upon by alkaline solvents; but Fourcroy found that nitric acid diffused in water, in time dissolves them almost entirely, except the animal matter.

The bone-earth calculi are soluble in muriatic acid.

In recommending the use of lithontriptics for calculi in the urinary organs, the physician ought therefore to endeavour to ascertain the nature of the concretion with which the patient is afflicted. Possibly some advantages might be derived by means of injections through the urethra, consisting of the substances found to dissolve calculi out of the body,—and the operation of lithotomy thereby be avoided.

With the view of at least reducing the stone or dividing it into fragments sufficiently small to admit of being discharged through the natural passage, some practitioners have advised the frequent and periodical use of injections of alkaline or acid solutions, properly diluted according to the nature of the calculi, by the urethra; but the practice has been but little adopted, and the few trials made of it have led to no decisive effects.

In violent paroxysms of pain recourse must be had to fomentations, consisting of equal parts of the decoction of poppy heads and the compound decoction of mallow, applied externally and internally by clysters:† and where these prove ineffectual, the

* See vol. iv. p. 486, and vol. v. p. 306, of the Medical and Chirurgical Review, for an account of the varieties of the urinary calculi, and the valuable experiments of Dr. Wollaston and Dr. G. Pearson on the subject.

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† 7. ℞ Ol. Terebinth. f. ℥j.
Ovi Vitell. q. s.
Misceantur, et adde
Decoct. Avenæ, f. ℥xij.
Tinct. Opii, ♏ xx.—xl. M.

ft. Enema.

Vel,

8. ℞ Decoct. Sem. Lini, f. ℥xij.

† 7. Take Oil of Turpentine, one drachm.
Yolk of Egg, a sufficiency.
Mix them, and add
Oatmeal Gruel, twelve ounces.
Tincture of Opium, from thirty to sixty drops.
Mix them for a Clyster.

Or,

8. Take Decoction of Linseed, twelve ounces.

patient should be put into a warm bath. With these means he should drink plentifully of diluting mucilaginous liquors, and take some proper opiate,* which he may repeat according to the urgency of the symptoms.

During the paroxysms of pain occasioned by a stone, by injecting tepid water by means of a catheter and vegetable bottle affixed thereto, the bladder may be distended, and the stone thereby removed from the sensible spot at the neck thereof. If two or three ounces of the fluid be very slowly injected into the bladder, the excessive pain will be immediately mitigated: but it is in cases of irritation and inflammation at the neck of the bladder, that this injection is of the most essential service.

In cases of gravel the solution of the calcareous matter is to be attempted by the same means which have been recommended for a stone in the bladder. In those diseases which arise from a relaxation of the kidneys and bladder, the uva ursi† with the alkaline aërated water, will be likely to prove highly serviceable.

Some inquiries by Sir Everard Home into the functions of the stomach,‡ led him to consider, that the generality of calculous complaints might possibly be prevented by introducing into this organ such substances as are capable of preventing the formation of uric acid; and that this mode of treatment would have many

‡ See the Philosophical Transactions for 1810.

Sodæ Sulphat. ℥ss.
Ol. Ricini, f. ℥iij.—f. ℥j.

Tinct. Opii, f. ℥ss.—f. ℥j. M.

ft. Enema.

* 9. ℞ Aq. Fœnicul. f. ℥jss.

Liquor. Potassæ Subcarbonat. ♏ xij.

Spirit. Æther. Nitrici, f. ℥ss.

Tinct. Opii, ♏ xij.—xx. M.

ft. Haustus ter in die sumendus.

† 10. ℞ Pulv. Fol. Uvæ Ursi, ℈j.—℥ss.

Aq. Puræ, f. ℥jss.

Spirit. Junip. f. ℥j.
Syrup. Cort. Aurant. f. ℥ij. M.

ft. Haustus ter in die sumendus.

Vel,

1. ℞ Pulv. Fol. Uvæ Ursi, ℥ss.

Pulp. Prun. Gallic. ℥j.
Syrup. Althææ, q. s. M.

ft. Electuarium, cujus sumat quant. nucis moschatæ ter in die.

Sulphate of Soda, half an ounce.
Castor Oil, three drachms to one ounce.
Tincture of Opium, from half a drachm to one drachm.

Mix them for a clyster.

* 9. Take Fennel Water, one ounce and a half.
Solution of Subcarbonate of Potass, twenty drops.
Spirit of Nitric Æther, half a drachm.
Tincture of Opium, twenty to thirty drops.

Mix them. This draught is to be taken three times a day,

† 10 Take Powder of the Leaves of Bearberry (or trailing Arbutus,) one scruple to half a drachm.
Pure Water, one ounce and a half.
Spirit of Juniper, one drachm.
Syrup of Orange Peel, two drachms.

Mix them, and take this draught thrice daily.

Or,

11. Take Powder of Bearberry, half an ounce.
Pulp of Prunes, one ounce.
Syrup of Marshmallow, a sufficiency. Of this electuary, the bulk of a nutmeg may be taken three times a day.

advantages over the usual method, which consists in attempting to dissolve the uric acid after it is formed. Magnesia was supposed by Sir Everard Home, from its insolubility in water, to be well adapted to this purpose, as it would remain in the stomach until it should combine with an acid, or be carried along with the food towards the pylorus. Upon putting this theory to the test of experiment, it was found, by a very careful examination of the urine, that in several instances where there was an increased formation of uric acid, magnesia diminished it in a much greater degree than had been effected in the same patient by a very liberal use of alkalies.

It is indeed now satisfactorily ascertained, that the tendency to form uric acid is best obviated by magnesia, which corrects those stomach complaints connected with the evolution of gravel or stone. If continued, however, beyond the proper mark, an opposite evil is generated, viz. a deposition of the phosphates. The preponderances are therefore to be watched, and magnesia and muriatic acid to be had recourse to as either extreme predominates. Carbonic acid is also useful, not from preventing the formation of the phosphates, but by holding them in solution in the urine.

It is certainly an important objection against the indiscriminate use of magnesia, that this earth being the basis of one of the most common species of calculi, the ammoniaco-magnesian phosphate, there is nearly an even chance, when magnesia is prescribed without any previous knowledge of the nature of the calculus which exists, that it will prove injurious, not only by affording the principal element of that calculus, but by also neutralizing in the primæ viæ any portions of uncombined acid by means of which the calculous matter might have been held in solution.*

During an acute fit of the gravel, where nephritis ensues, or is to be apprehended, we should draw off a quantity of blood proportionable to the age of the person, after which he ought to be put into a warm bath. When taken out of it, flannel cloths wrung out in a warm infusion of emollient herbs, or bladders filled with warm water, may be applied immediately over the part: emollient and anodyne clysters† may be injected frequently, as advised for the stone, and opiates‡ be administered repeatedly until the pain and irritation are removed. To assist these means the patient

* See Essay on Calculous Disorders, by A. Marcet, M. D.

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† 12. ℞ Decoct. Malvæ C. f. ℥xi.
Ol. Olivæ, f. ℥ss.
Tinct. Opii, ℥ xl. M.
pro Enemate.

‡ 13. ℞ Opii Purificat. gr. j.
Extract. Glycyrrhiz. gr. ij. M.
ft. Pilula 4tis vel 6tis horis repetenda.

Vel,

14. ℞ Mucilag. Gum. Acaciæ, f. ℥ss.

† 12. Take Compound Decoction of Mallow, eleven ounces.
Olive Oil, half an ounce.
Tincture of Opium, sixty drops.
Mix them for a clyster.

‡ 13. Take Opium, one grain.
Extract of Liquorice, two grains.
Make them into a pill, which is to be repeated every four or six hours.

Or,

14. Take Mucilage of Gum Acacia, half an ounce.

should drink freely of mucilaginous diluting liquors, such as linseed-tea, solutions of gum acacia, and a decoction of barley; to which may be added a small quantity of the nitrate of potass if much febrile heat prevails, or there seems any tendency to inflammation.

If the pain and heat in the region of the kidney do not abate in twelve hours, and the pulse remain equally hard and frequent, the venesection may be again repeated.

When the pain has somewhat subsided it will be right to give some opening medicine, such as the oleum ricini; but if the stomach should reject this, about two drachms of the sulphate of magnesia in linseed-tea, with or without four or five drops of the tincture of opium, may answer the intention.

Diuretics and blisters would be improper.

In local pains, from the stimulus of any extraneous body, as in gravel descending along the ureter, the application of cold on or near the part affected may often be used with a very salutary effect. Dr. Darwin mentions a case of this nature, where a gentleman who had laboured under excessive and continued pain from gravel in the ureter, found instantaneous relief very frequently in the day by applying on the painful part a bag of snow or pounded ice, and suffering it to dissolve. When these cannot be procured, cold may be generated by allowing æther to evaporate on the part so as to render the vessels torpid or inactive.

In cases of renal hæmorrhage which are moderate; rest, cool air, some of the acids, vegetable balsams, and sedatives, must be employed: but when the loss of blood is very considerable, alum, acetate of lead in moderate doses, and opium, are the surest means of arresting the flow.

To regulate and simplify the diet will be found highly important in our curative and preventive indications in all cases of gravel and stone; and vegetable, as being more readily digestible and more easily assimilated by some weak stomachs than animal food, and as containing no azote (which the latter does, as before observed) is much more appropriate fare for individuals subject to these disorders. They should likewise be moderate in the use of generous wines and spirituous liquors, the last of which should be always well diluted with a large proportion of water, thereby rendering them better adapted to excite the action of the kidneys. In the greater number of cases of gravel such is the quantity of uric acid formed, and such is the want of solubility of this substance, that however abundant the urine may naturally be, it is not sufficient to hold the uric acid in solution, nor consequently to prevent the for-

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Aq. Fœnicul. f. ℥j.	Fennel Water, one ounce.
Spirit. Ætheris Nitric. f. ℥ss.	Spirit of Nitric Æther, half a drachm.
Tinct. Opii, ♏ xij.	Tincture of Opium, twenty drops.
Syrup. Althææ, ℥j. M.	Syrup of Marshmallow, one drachm.
f. Haustus quartis horis sumendus.	Mix them, and let this draught be taken every four hours.

mation of gravel. We ought therefore, in diseases of this nature, to endeavour to increase the secretion of urine, by directing the patient to drink copiously of aqueous fluids which are known to be diuretic. The alkaline aërated water is proper for those who are afflicted with stone or gravel. Spring or soft water will be preferable to pump water. From various experiments we seem authorized in concluding, that acids are prejudicial, and give rise, in those disposed to these complaints, to the formation of gravelly and calculous concretions, by causing a separation and crystallization of the uric acid contents of the urine within the body. It is indeed a matter of common observation, that calculus and gravelly complaints are aggravated by acid and acescent drinks of all kinds, and that alkaline substances alleviate these disorders.

Seltzer water has sometimes been employed with much advantage in diseases of the urinary organs, especially those which are attended with the formation of calculi. What solvent power it may exercise over these concretions is not yet determined; but it is certain that under the use of this remedy the mucous, sabulous, and often purulent discharge which accompanies the urine, is rendered less painful; and, in general, micturition is much less difficult.

Painful complaints of the kidneys and bladder, connected with the formation of a calculus, are said to be much relieved by an internal use of the Buxton water, and its use as a bath is found greatly to assist its employment as an internal medicine.

Many who have been much incommoded with gravelly complaints have experienced relief by using the garden leek, prepared in the following manner:—

Take a handful of the roots or fibrous parts, with a few sprigs of fennel, and boil them in two quarts of water, over a gentle fire, until the half is evaporated; then pour off the remainder, strain it, and drink about a pint a day.

ORDER VIII.

DIALYSES.

Discontinuity of a part manifest to the sight or touch.

ULCUS, or ULCER.

In including ulcers among the other diseases, it is by no means my intention to interfere with what belongs to the province of surgery; and only a few remarks will therefore be made on such as are accompanied by an affection of the system, taking notice at the same time of Mr. Baynton's new method of treating those of an obstinate nature.

Ulcers usually proceed from some external injury, such as a wound or bruise, being afterwards kept open by neglect or an im-

proper mode of treatment; or they arise in consequence of inflammation, syphilis, scurvy, or some other disease.

When an ulcer is of long standing and has become habitual, or seems to serve as a drain in carrying off some peccant humour from the body, it should by no means be healed up without substituting an artificial discharge in its stead by means of one or more issues, as many have fallen martyrs to imprudence of this nature, but more particularly those who have been somewhat advanced in life. Where an ulcer is of a recent nature, it ought to be healed up as expeditiously as possible, with the assistance of precipitate and light bandages carried from the foot and ankle upwards.

Where the granulations rise above the level of the skin, the sulphate of copper may be substituted, as repressing them, and leaving the surface more disposed for cicatrization. Sir Everard Home recommends the application of rhubarb in these cases, but its powers seem of rather too feeble a nature.

To sweeten fetid and foul ulcers, and dispose them to granulate favourably, a poultice, composed of half a pound of the common farinaceous cataplasm, and two ounces of wood charcoal, well mixed together, is often employed with a happy effect. Carrots boiled a sufficient length of time, and then mashed into a pulp, so as to form a poultice of a proper consistence, are also used in cases of this nature with similar efficacy; their power possibly may be considerably increased by well washing or fomenting the ulcerated part with the liquor in which the carrots have been boiled. In ulcers requiring to be treated with powerful antiseptic remedies, the cataplasma effervescens of the Pharmacopœia Chirurgica (as directed to be prepared under the head of Gangrene,) will be the most proper application.

The powder of the bark of xanthoxylon (known in the West Indies by the name of Hercules' club) applied to the surface of inveterate ulcers, has lately been found to be a powerful remedy in cleansing and rapidly pomoting the healing action after the sloughing process in them has been corrected.

In ulcers of long standing, and where the habit of body is vitiated, besides attending to the local affection, it will be right to endeavour to amend the depravity of constitution by administering medicines of an alterative nature, such as the pilul. hydrargyr. submur. compos., a solution of the oxymuriate of mercury and a decoction of the woods. Where we have reason to suspect a venereal taint to be lurking in the constitution, these medicines will be indispensably necessary.—See Syphilis.

In the malignant, foul, and fetid ulcers of seamen, warm cataplasms and emollient greasy applications usually produce pernicious effects; but stimulants, very beneficial ones. The remedies of this description from which most advantage is usually derived, are diluted rectified spirit, or diluted rum or brandy, weak solutions of the nitrate of silver, of the sulphate of copper, red oxyd of mercury, &c. Lemon juice is strongly recommended by Dr. Blane, and is used by navy surgeons with an excellent corrective effect in

foul, dark-coloured, fetid, or scorbutic ulcers. The dressings to such sores should always be removed at least twice a day. A tight and well-applied bandage of calico will greatly contribute to the cure.

Where ulcers arise in consequence of scurvy, the remedies advised under that head must be resorted to, besides attending to the sores.

It not unfrequently happens, that a combination of the different kinds of ulcer takes place, and that the callus is attended with a specific morbid action. The latter may be removed, and yet the ulcer may be intractable from assuming the former character. Whatever plan of treatment be adopted, it appears evidently the intention to reduce the sore to a state of simple ulcer. Whether in this form, or attended with callous edges, the plan of treatment recommended by Mr. Baynton will be proper. He advises as follows :—

The parts should be first cleared of that hair which is sometimes found in considerable quantities upon the legs, by means of a razor, that none of the discharges, by being retained, may become acrid and inflame the skin, and that the dressings may be removed with ease at each time of their renewal, which in some cases, where the discharges are very profuse and the ulcers irritable, may perhaps be necessary twice in twenty-four hours, "but which I have (he says) in almost every instance, been only under the necessity of performing once in that space of time."

The plaster should be prepared for spreading by melting in an iron ladle over a slow fire four ounces of common plaster of diachylon with half a drachm of yellow resin; when melted it should be stirred till it begins to cool, and then be spread thinly upon slips of smooth porous calico of a convenient length and breadth, by sweeping it quickly from the end that is held by the left hand of the person who spreads it, to the other end that must be held firmly by another person, with the common spatula that is used by apothecaries: the uneven edges must be then cut off, and the pieces so prepared cut into slips of from two to three inches in breadth, and of a length that will, after being passed round the limb, leave an end of about four inches.

The middle of the piece so prepared should then be applied to the sound part of the limb that is opposite to the inferior part of the ulcer, so that the lower edge of the plaster may be placed about an inch below the edge of the sore, and the ends should then be drawn over the ulcer with as much gradual extension as the patient can well bear; other slips should be secured in the same way, each above the other, until the whole surface of the sore and the limb are completely covered with the plaster at least an inch above and below the diseased part.

The whole of the affected parts should then be defended with pieces of soft calico, three or four times doubled and very evenly applied; and a calico bandage of about three inches in breadth

and four or five yards in length, or rather as much as will be sufficient to support the limb from the foot to the knee, should be applied with as much firmness as can be borne by the patient, and as much evenness as can be obtained by the attention of the surgeon, by passing it first round the leg at the ankle joint, then once or twice round the foot, and afterwards up the limb till it reaches the knees,—observing that each turn of the bandage should have its lower edges so placed as to be about an inch above the lower edge of the fold next below.

The whole of the parts that are at all affected should then be well moistened with cold spring water poured from a large teapot; and it should, if the parts be much inflamed, or the discharge either acrid or profuse, be renewed as often as the heat of the parts may indicate, or perhaps at least once in every hour. The patient may then take what exercise he pleases, "as I have," Mr. Baynton says, "been generally told by mine that they have been easier when they walked much; and have generally found that their cures have not been retarded, but, on the contrary, most times accelerated by their exertions in that way; and I think it will be obvious, that cures which are obtained under such treatment will be much more lasting than those that are accomplished in any way where the patient is confined to his bed."

Mr. Baynton adds, "I have chosen to apply the means here recommended to those cases that have fallen under my care, at an early hour in the morning; that is, before the œdema has come on which so frequently attends such cases; first, with a view to restore the tone of the refluent vessels by supporting their sides when in a natural state; and, secondly, with the expectation of being able to bring the divided edges nearer together whilst the parts are in that situation, and the skin relaxed, than it would be possible to do when the parts are distended by tumefaction.

"I have also preferred the use of calico to linen, from much experience of its superiority in many respects. It does not subject the parts to that inconvenient and undue stricture that is experienced in the use of linen; it is more pervious, and consequently prevents the formation of sinuses, which might be occasioned by a complete retention of the discharges, if accompanied by the pressure so much recommended; it appears to possess more of the accommodating properties of the true skin, and by its elasticity is well calculated to yield a little to muscular action, whilst it affords sufficient support to the parts; and, lastly, it is much cheaper. I have before said, that porous calico will be found most useful, and I prefer that which, being smooth and free from inequalities, is to be bought at about a shilling a yard, to that which is more expensive, and less pervious. As a bandage, too, I think it much preferable to either linen or flannel; it is more elastic, soft, and accommodating than the former; and besides being less cumbrous and more cleanly than the latter, possesses the additional advan-

tage of being a much better conductor of that morbid heat which so constantly affects inflamed parts, and which it is essential to remove."

The many cases cited by Mr. Baynton in his tract,* seem clearly to establish the superiority of this method of treatment over every other that has yet been adopted, and to prove that speedy cures may be obtained in the worst and oldest ulcers of the poorest people, even where the true skin cannot be brought forward so as in any degree to cover the denuded parts.

Mr. Baynton asks, To what circumstances are we to ascribe these facts? and goes on to say, they cannot surely be referred to the ingredients of the adhesive plaster, to the effects of the bandage, to the exercise that is used, nor to any constitutional interference, as the same effects have always followed the application of these principles, whether the patients have been young or old, robust or emaciated, temperate or disorderly; whilst ointments, composed of the same ingredients as the adhesive plaster, bandages, exercise, and all the means except the *endeavour to bring the divided parts together*, to which it may be supposed the cures can be attributed, had been tried in every way in most cases without any such advantages being obtained.

This question Mr. Baynton answers himself, by referring to Mr. Hunter's doctrine on this subject, which teaches that sores, in their progress of healing, are lessened in their extent, by a contraction of the newly formed granulations; and that this contraction is assisted by the mechanical effects of the adhesive plaster applied in the way just mentioned.

Another theory, as to the modus operandi of the remedy, has been suggested by Mr. Simmons,† surgeon to the Manchester Infirmary, who approves highly of the employment of adhesive plasters, as recommended by Mr. Baynton, and seems to consider it as one of the greatest improvements in modern surgery: he has found that more can be accomplished by it in one week, than could be effected in several according to the old method.

Mr. Baynton, he observes, considers the efficacy of his plan as depending on the endeavour to bring the divided parts nearer together. But whoever attends to its effect on an extensive old ulcer, on the interior part of the leg, for example, will see the impossibility of bringing the original skin to approximate. Admitting his facts, the benefit may be produced in two ways, *first*, by acting as a bandage, giving tone and removing induration; and, *secondly*, by keeping the ulcerated surface level with the surrounding skin. The process of skinning resembles the freezing of water, or the crystallization of salts, both of which are facilitated by an even surface, which is essential to the due configuration of the crystals. On the same principle it is, that the adhesive plasters

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* See his Descriptive Account of a New Method of treating old Ulcers of the Legs.

† See Dr. Duncan's Annals of Medicine for 1797, article the 14th.

are so efficacious. Such are Mr. Simmon's sentiments on the modus operandi of the method proposed by Mr. Baynton, and they seem very plausible.

SCALDS, AND BURNS.

In almost all cases of burns and scalds, there arises soon after the infliction of the injury a sense of coldness amounting to shivering. This commonly soon goes off, and in those cases where there is increased action alone, the symptoms of inflammatory fever supervene. But when the injury has been more violent, when exhaustion has followed immoderate excitement, the shivering is severe and long-continued, and seldom followed by re-action.

In all accidents from scalds and burns, it seems to be of the utmost importance to apply a remedy at the instant; for by this means the violent anguish is allayed, and vesication, which in scalds at least is usually so considerable as to lay the foundation for a tedious curative process, is in a great degree prevented. Of the remedies most quickly to be procured on such occasions, plunging the part which has sustained the accident, without a moment's delay, into very cold water, or pumping upon it, is of the greatest service. The transition from torture to ease will be truly rapid. Water is always at hand, and after proper immersions in it for a due length of time it may be sufficient to cover the injured parts with linen rags moistened therewith, passing over them from time to time, streams of air by means of a small tube or bellows, until a sense of freezing or a considerable degree of cold arises. By this simple process, a large piece of skin that has been burnt to the appearance of charring, and surrounded by a high degree of inflammation, has been perfectly cured in the course of a very short time: no sloughing or ulceration taking place, but the crust coming off dry, and leaving a sound surface.

Of late, the application of ice has been much recommended by Sir James Earle and a few other practitioners of eminence.

It has long been the practice of St. Thomas's Hospital, in cases of burns or scalds, to smear the parts well with a feather dipped in the oily liniment inserted below;* but it seems a very inefficacious application; and I think it will be more advisable to apply linen cloths wetted with either cold water, or what is here† recom-

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* 1. ℞ Olei Olivæ, f. ℥iij.
Liquor. Calcis, f. ℥vj. M.
ft. Linimentum.

† 2. ℞ Spirit. Rectificat. f. ℥ij.
Liquor. Calcis, Oss. M.
ft. Lotio.

Vel,

3. ℞ Liquor. Plumbi Subacet. f. ℥j.
Spirit. Camphor. f. ℥iij.
Aq. Distillat. Oj. M.

* 1. Take Olive Oil, three ounces.
Lime Water, six ounces.
Mix them.

† 2. Take Rectified Spirit, two ounces.
Lime Water, half a pint.
Mix them.

Or,

3. Take Solution of Subacetate of Lead, one drachm.
Camphorated Spirit, three drachms.
Distilled Water, one pint.
Mix them.

mended, as long as the parts are occupied by heat and inflammation. When these subside, the liniment may be used, or we may employ the unguentum ceræ spread on fine lint as the dressing.

Æther, or rectified spirit, applied in such a manner as to favour its speedy evaporation, and thereby the abstraction of heat, may be still more efficacious than the remedies already mentioned. When there is no exposure from a separation of the cuticle, the æther or rectified spirit, somewhat diluted, may be evaporated from the skin, by keeping a piece of thin linen cloth wetted therewith over the parts aggrieved, and moistening it from time to time; but when the injured parts have been deprived of their natural covering, it will be advisable to lay immediately over them a piece of thin bladder, and then the linen cloth, as before, keeping it continually moist by squeezing a sponge wetted with the evaporating liquid over it. As long as the pain and heat last, this process should be continued; but as soon as the inflammation is subdued, the process of evaporation must be discontinued, lest we should occasion a greater abstraction of caloric than is consistent with health.

To alleviate pain and procure rest, in cases where the injury is extensive, as likewise in those cases in which there is a severe shock given to the nervous system, as occasionally happens in injuries of this nature, it will be right to have recourse to opiates, in such doses as shall be found sufficient to alleviate the severity of the pain and nervous irritation.

When much febrile heat ensues, we should employ gentle laxatives and refrigerants; in short, the antiphlogistic plan should be strictly pursued.

If the parts become livid and black, so as to threaten the coming on of a mortification, then the cinchona bark and wine, with the other means advised under that particular head, must be resorted to.

Instead of the application of cold water, ice, and the other soothing means just mentioned, a plan of a directly opposite nature has been recommended by Dr. Kentish.* He advises to apply stimulants externally, such as oil of turpentine, the liquid volatile alkali, and æther so managed as to avoid the cooling process of evaporation.

In their application, we are directed to proceed as follows:— The injured parts are to be bathed two or three times over with rectified spirit, camphorated spirit, or oil of turpentine, heated by standing in hot water. After this a liniment is to be applied

* See his Essay on Burns.

Vel,

4. ℞ Liquor. Plumbi Subacetat. f. ʒj.
Aquæ Distillat. Oj.
Spirit. Rectif. f. ℥ss. M.

Or,

4. Take Solution of Subacetate of Lead, one drachm.
Distilled Water, one pint.
Rectified Spirit, half an ounce.
Mix them.

on soft cloth, composed of the ceratum resinæ, softened with oil of turpentine. This liniment is to be renewed only twice in twenty-four hours, and at the second dressing the parts are to be washed with proof spirit, or tinctura opii made warm. When a secretion of pus takes place, milder applications must be made, till the cure is effected.

To excite the system at the same time, he recommends the internal use of æther, brandy, opium, and other stimulants; which are to be given in proportion to the degree of injury, immediately after the accident, and to be repeated once or twice within the first twelve hours, and afterwards wine or ale till suppuration takes place, when it will be no longer necessary to excite the system.

On this mode of treatment, so highly spoken of by Dr. Kentish, I have to remark, that it requires further experience, and the concurrent testimony of other practitioners. Mr. Bell has indeed lately favoured us with some observations,* which tend greatly to recommend it. His words are, "The superiority of the stimulating practice is manifested in this, that when the essential oil of turpentine is applied to a scalded or burnt part, relief is, in most cases that I have seen, produced within half an hour, provided that the remedy is made use of as soon after the accident as possible; nor have I observed any case, under the above circumstances, where the pain was protracted more than two hours.

"In several slight cases where I have seen cold water made use of, it always required six, and not unfrequently eight hours, to free the sufferer from agony; for the moment the application of cold water ceased, the pain returned with much greater violence." He adds, "I recollect a case which an eminent surgeon in Newcastle, Mr. Anderson, communicated to Dr. Kentish more than two years ago, and which is most decidedly in favour of what is here advanced. A lady had both her arms severely scalded with boiling water, from above the elbows down to the fingers' ends. The ol. terebinth. was applied to one arm soon after the accident, and the other plunged into cold water, which was renewed as often as it became warm. That arm to which the ol. terebinth. was applied, became perfectly easy in about half an hour; the other continued to give pain, when taken out of the water even for an instant, for more than six hours: and, as far as I recollect, it required a much longer time for its cure than the other."

By further information from Dr. Kentish,† we are given to understand that the faculty in his neighbourhood‡ have almost all adopted his mode of practice, on the fullest conviction of its efficacy. It appears likewise that Mr. S. Hammick, jun., of the Royal Naval Hospital at Plymouth, has favoured him with his

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* See Medical and Physical Journal, vol. iii. p. 208.
† Ibid. p. 262.
‡ Newcastle upon Tyne.

opinion of its superior merit to every other means used in that extensive institution, where he has an ample field for experiment, from the frequent explosions of gunpowder on board his Majesty's ships. His words are, "I am decidedly of opinion that the practice of applying immediately to burns the oil of turpentine, is the best I have ever yet seen adopted, as the process to suppuration is, in general, more rapid, and those irregular marks, or seams, found after other applications, are not to be met with after the turpentine; neither is the skin so disposed to crack, or break open again, as was formerly too often the case, producing the most troublesome and irritable sores."

In Dr. Kentish's second Essay on Burns, in which he attempts to refute the opinion of Sir James Earle, on the supposed benefit of the application of ice in such accidents, a number of additional proofs are brought forward to establish the superiority of his stimulant mode of treatment over that of cold applications. In the detail of practice he has however been induced to make some alterations from his original plan, notwithstanding that he therein pursues the principle of treatment recommended in his first Essay. His words are, "In the first species, *where the action of a part only is increased*, I have not found any thing better for the first application than the heated ol. terebinth. and the digestive thinned with the same. In superficial burns, when the *pain* has ceased, it will be advisable to desist from this application in about four and twenty hours, as that time, in many cases, will be sufficient and at the second dressing, a digestive sufficiently thinned with common oil, will be adequate to the case, and on the third day to begin with the ceratum calaminæ. I have frequently seen secondary inflammation excited by the remedy, which in the first instance puzzled and perplexed me considerably. I have likewise been informed of this consequence by several gentlemen. The most certain *remedy* for this unpleasant symptom, is to apply a plaster with digestive, thinned with oil, or a plaster of cerate, and over that a *large warm* poultice. This most effectually takes off the irritation of the part, and the cerate will finish the cure. Should there be much uneasiness of the system, an anodyne proportioned to the age of the patient should be given."

Mr. Parkinson of Leicester, is another advocate for the stimulating plan, and speaks highly of the efficacy of rectified spirit in relieving the pain and inflammation occasioned by burning or scalding any part of the body.* The mode of treatment he recommends is to cover the part with pieces of bladder, softened by dipping them in warm water, keeping the outer surface constantly wetted with the spirits. He mentions, that the pain usually ceases in half an hour, but in deep and extensive burns the application must be

* See Memoirs of the Medical Society, vol. v. article vii.

continued for twelve or twenty-four hours, at the end of which time the inflammation will be found to be entirely removed. To heal the ulcer, a cerate of wax and oil may be applied.

In the second volume of Medical Facts and Observations, the late Mr. John Hunter has stated the communications of an eminent brewer at Edinburgh (Mr. David Cleghorn,) on the subject of burns and scalds, which accidents have been very successfully treated by applying vinegar. The good effects of vinegar in these cases, Dr. Kentish is inclined to attribute to the alcohol it contains.

Between the advocates for the adoption of a cooling treatment and those who recommend a stimulating one, there seems indeed a perfect opposition both in theory and practice. My opinion is, that the cooling treatment will be most advisable while the sensation of heat and pain exists; but when these are removed, and symptoms of debility occur, or when they primarily appear, I think the stimulant plan ought to have the preference.

Much certainly depends on the constitutional variety of the subjects, as well as on the different stages or degrees of the accident. Perhaps, if no other inconvenience than a slight vesication of the injured parts is sustained, no remedy can be more aptly resorted to than the refrigerant application of cold water: but when the integuments are so burnt that the cuticle is entirely destroyed, and the parts are affected with great vesication and pain, and there is at the same time inaction in the system, with symptoms of irritation, then the stimulant qualities of the terebinthinate application, supporting the powers of life at the same time with cordials and appropriate nourishment, will certainly be preferable, as the sedative effects of cold under such circumstances might extinguish the vital principle.

HERPES.

Herpes consists in an eruption of broad itchy spots dispersed here and there over the skin, of a whitish or red colour, which at length run into each other, discharge a thin serous fluid, and either form extensive excoriations or ulcers. After a certain time scurfy scales appear, which peel off, and leave the under surface red; the same appearances are, however, renewed in a successive series, till the disease is either cured, or goes off spontaneously, which is indeed rarely the case. Being a complaint confined to the skin, it seldom happens that the general health suffers any great change.

Its causes may be referred to a want of cleanliness, a low diet, and a damp situation; but certain constitutions seem nevertheless particularly predisposed to herpetic eruptions.

The best remedies for these eruptions are ointments prepared

from the oxyd of zinc,* the white precipitate of mercury, or a small quantity of hydrargyri oxymurias, and lard, making use at the same time of lotions somewhat of a similar nature with those recommended in psora; or as here prescribed,† being somewhat similar to the nostrum sold under the name of Gowland's lotion. I have frequently found a strong decoction of the fresh leaves of digitalis to be a very good wash for herpetic eruptions of a troublesome and extensive nature. The following, which is a powerful sedative application, has been employed with success in herpes and other inflammatory complaints of the skin. Mix one drachm of Prussic acid with six ounces of elder-flower water, and use this lotion twice a day.

Where the disease is inveterate, it may be necessary to have recourse to the internal use of medicine, such as pills of the submuriate of mercury and antimony,‡ a solution of hydrargyri oxymurias, the liquor arsenicalis in the dose of six drops three times a day, increasing it gradually to twelve or fifteen; a decoction of

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* 1. ℞ Zinci Oxydi, ʒss.
Adipis Præparat. ʒj. M.
ft. Unguentum.

Vel,

2. ℞ Unguent. Hydrarg. Præcipit. Alb.

Vel,

3 ℞ Unguent. Hydrarg. Nitratis.

† 4. ℞ Amygdal. Amar. Decort. ʒij.

Contunde in mortario marmoreo, dein bene terens gradatim adjice
Aq. Distillat. Oj. et cola.
Liquori colato adde

Hydrargyr. Oxymur. gr. xij. in

Spiritûs Rectificat. f. ʒij. prius solut. M.
ft. Lotio.

‡ 5. ℞ Hydrargyr. Submuriat.
Antim. Sulphuret. Præcip. āā ʒj.

Guaiac. Gummi Resinæ ʒij.

Bals. Copaib. q. s. M.

Fiant Pilul. lx. Capiat j.—iij. omni nocte horâ decubitûs.

Vel,

6. ℞ Pilul. Hydrargyri,
Pulv. Antimonial. āā gr. ij.

Opii, gr. ss.
Syrup. Simpl. q. s. M.
ft. Pilula omni nocte sumenda.

* 1. Take Oxyd of Zinc, half a drachm.
Prepared Lard, one ounce.
Mix them.

Or,

2. Take Ointment of the White Precipitate of Mercury.

Or,

3. Take Ointment of the Nitrate of Mercury.

† 4. Take Bitter Almonds, blanched, two ounces.
Bruise them in a mortar, then gradually add
Distilled Water, one pint.
Strain the liquor, and make an addition to it of
Oxymuriate of Mercury, twelve grains.
Which has been previously dissolved in Rectified Spirit, two drachms.

Mix them together for a lotion.

‡ 5. Take Submuriate of Mercury,
Precipitated Sulphur of Antimony, of each one drachm.
Guaiacum Resin, in powder, two drachms.
Balsam of Copaiba, a sufficiency to form the mass.
Let sixty pills be made out of this, of which from one to three may be taken every night at bed-time.

Or,

6. Take Mercurial Pill,
Antimonial Powder, of each two grains.
Opium, half a grain.
Syrup, a sufficiency to form a pill, which is to be taken every night.

elm bark, sarsaparilla, or guaiacum, or the mineral acids,* together with a vegetable and milk diet, at least avoiding all salted meats. Some gentle aperient may be taken occasionally.

A severe case of herpes lately came under my observation which had resisted various means, but which was at last perfectly removed, in a comparatively small period, by giving the patient twenty drops of the oxygenated muriatic acid internally three times a day, gradually increasing the dose; using at the same time, frequently throughout the day, a lotion composed of two drachms of the solution of potass in a pint of water. Its strength was at last augmented to three drachms.

The effects of a tepid bath in promoting the natural excretions by the skin, render it very serviceable in curing herpetic eruptions: indeed in all cases of cutaneous foulness it will be found a most important auxiliary to internal remedies. A bath prepared from, or saturated with the sulphuret of potass, has been employed with great success in the cure of herpes.

TINEA, OR SCALLED HEAD.

THIS disease consists in a chronic inflammation of the skin of the head, productive of a secretion of matter, peculiar in its nature, and capable of propagating the complaint, if applied to the scalp of a healthy subject. At first the eruption is confined, probably, to only a small portion of the head; but by degrees its acrimony is extended to the neighbouring parts, and at length the whole of the scalp is eroded, and beset with a scabby eruption. Dr. Willan has substituted the term porrigo for that of tinea, as being less objectionable, and considers this genus as consisting of several varieties.†

Children are principally affected with it, particularly those of the poor; hence it evidently arises from uncleanliness, from the want of a due proportion of wholesome nutritive food, and possibly from bad nursing. At any rate these will very much aggravate the disease. In many instances it is propagated by contagion, either by using a comb imbued with the matter from the head of a person labouring under it, or by putting on his hat or cap.

† See his Treatise on Porrigo and Impetigo.

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* 7. ℞ Acid. Sulphuric. f. ℥ij.

Aq. Fontan. f. ℥jss. Post effervescentiam adde

Syrup. Simpl. f. ℥ij. M.

Capiat f. ℥j. vel f. ℥ij. bis terve in die ex Aquæ Puræ cyatho.

* 7. Take Sulphuric Acid, two drachms.

Add gradually

Pure Water, one ounce and a half.

After the effervescence has ceased, make an addition of

Common Syrup, two drachms.

Mix them. Of this let the patient take from sixty to one hundred and twenty drops twice or thrice a day in a teacupful of water.

When proper means are early adopted the disease seldom proves difficult of cure.

The treatment consists in shaving the head close, and afterwards covering it with an ointment made of sulphur and pitch, or muriated mercury and pitch, previous to the daily application of which* it may be washed with a little of either of the lotions† here advised. If these should fail, we may substitute astringent or stimulating applications, paying a cautious attention at the same time to the general health. As a covering for the head we may use the oiled-silk cap.

In those scurfy eruptions of the head which are observed in children, and when a thin ichor pervades the cuticle and excoriates the parts, the application of a little of either of the ointments marked thus‡ will be found of considerable utility, and will indeed seldom fail of effecting a radical cure. It should be applied every

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* 1. ℞ Picis Liquid. Oss.
Ceræ Flav. ℥ss.
Sulph. Loti, ℥ij. Solv.
ft. Unguentum.

Vel,

2. ℞ Unguent. Picis Liquid. ℥ij.
Hydrargyr. Oxymuriat. gr. vj. M.
ft. Unguentum.

Vel,

3. ℞ Unguent. Pic. Liquid. ℥j.
—— Hydrargyr. Nitrat. ℥ss. M.

† 4. ℞ Tabaci, ℥ij.
Aq. Fontan. Oj. coq. ad Oss. et colaturæ adde
Liquor. Potassæ Subcarb. f. ℥j. M.
ft. Lotio.

Vel,

5. ℞ Potassæ Sulphuret. ℥ss.
Liquor. Calcis. Oj.
Liniment. Saponis Comp. f. ℥j. M.
ft. Lotio.

‡ 6. ℞ Hydrargyr. Præcipitat. Alb. ℈j.
Plumbi Acetis, ℥ss.
Unguent. Hydrargyr. Nitratis, ℥ij.
Unguent. Picis Liquid. ℥iij. M.
ft. Unguentum.

Vel,

7. ℞ Adipis Præparat. ℥j.
Æruginis,
Hydrargyr. Præcip. Alb. āā ℈j. M.
ft. Unguentum

* 1. Take Tar, half a pound.
Yellow Wax, half an ounce.
Washed Sulphur, two ounces.
Mix them over a fire.

Or,

2. Take Tar Ointment, two ounces.
Oxymuriate of Mercury, six grains.
Mix them.

Or,

3. Take Tar Ointment, one ounce.
Ointment of Nitrate of Mercury, half an ounce.
Mix them.

† 4. Take Tobacco, two drachms.
Pure Water, one pint.
Boil it down to half a pint, strain off the liquor, and add to it
Solution of Subcarbonate of Potass, one drachm.
Mix them for a lotion.

Or,

5. Take Sulphuret of Potass, half an ounce.
Lime Water, one pint.
Compound Soap Liniment, one ounce.
Mix them.

‡ 6. Take White Precipitate of Mercury, one scruple.
Acetate of Lead, half a drachm.
Ointment of the Nitrate of Mercury, two drachms.
Tar Ointment, three ounces.
Mix them.

Or,

7. Take Prepared Lard, one ounce.
Subacetate of Copper,
White Precipitate of Mercury, of each one scruple.
Mix them.

night, covering the parts with a bladder or linen, and again be washed off in the morning with soap and water.

In the cure of tinea capitis, cutting off the hair as close as possible, well washing the parts with warm soap and water, and afterwards sprinkling them pretty thick with powdered charcoal night and morning, has proved very efficacious.

For the removal of tinea capitis, many of the French surgeons, after applying emollient applications to remove the scabs, have then recourse to shaving the head, which is repeated every two or three days, applying daily an ointment composed of the hydro-sulphuret of potass: others, after the application of a poultice, resort to an ointment made of caustic potass, mixed with lard or oil, which in a few days makes the hairs fall off, or allows them to be pulled out with little force and without pain. When the hairs have been removed by the caustic application, and the cure effected, they grow plentifully again. The hairs are only taken off by the caustic application in those patches where the tinea exists.*

Besides these external applications, it may sometimes be necessary to administer alterative medicines† at the same time. The doses must be varied according to the age, constitution, &c. of the patient; and if acidity abounds in the primæ viæ, some absorbent, such as the creta præparata, or magnesiæ carbonas, according as the bowels may be more or less affected, should be combined. In all cases the body ought to be kept open. The occasional use of a tepid bath might probably be of some service.

The eruption in tinea has been known to give way to the internal use of sulphuric acid where only wheat flour has been applied externally. It is said to have been frequently cured likewise by tes-

* See Sketches of the Medical Schools of Paris, by Mr. J. Cross.

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† 8. ℞ Magnesiæ Subcarb. gr. xij.
Hydrarg. Submuriat. gr. ss.
ft. Pulvis horâ somni sumendus.

Vel,

9. ℞ Antimon. Sulphur. Præcipit. gr. j.
Hydrargyr Submuriat. gr. ss.
Cretæ Præpar. gr. v. M.
ft. Pulvis mane et nocte capiendus.

Vel,

10. ℞ Hydrarg. Submuriat. ℥ss.
Pulv. Antimon. gr. xv.
Opii Purificat. gr. x.
Syrup. Simpl. q. s. M.
Fiant pilulæ xxx. quarum sumat æger j. vel ij. omni nocte horâ decubitûs.

† 8. Take Subcarbonate of Magnesia, twelve grains.
Submuriate of Mercury, half a grain.
Mix them, and let this powder be taken every night at bed-time.

Or,

9. Take Precipitated Sulphur of Antimony, one grain.
Submuriate of Mercury, half a grain.
Prepared Chalk, five grains.
Mix them. This powder is to be taken morning and night.

Or,

10. Take Submuriate of Mercury, half a drachm.
Antimonial Powder, 15 grains.
Opium, ten grains.
Syrup, a sufficiency.
Mix them, and divide the mass into thirty pills, of which let the patient take from one to two every night on going to bed.

taceous powders alone; two materials very different in their chemical properties, but agreeing in their power of promoting cutaneous absorption.

If the glands of the neck should happen to swell on the head becoming dry, we ought to advise the insertion of an issue in the neck, or the occasional application of a blister to it.

The diet in tinea capitis should be wholesome and nutritive, avoiding salt meats and fish.

PSORA, OR THE ITCH.

THE itch is evidently confined to the skin, and rarely affects the general system, however great its irritation.

It arises most usually from infection communicated by coming into immediate contact with the body of a person already affected, or by wearing the same clothes, or lying in the same bed-linen that he has done; but it is sometimes produced by unwholesome food, bad air, and a neglect of cleanliness. Those who reside in a cold mountainous situation seem particularly predisposed to it: hence these united causes make it a disease of very frequent occurrence among the Highlanders of Scotland.

The itch shows itself in small pimples about the fingers, wrists, hams, and waist, which after a short time become so many pustules, and are attended with such an itching as to occasion a constant desire to scratch. When they break, the acrid fluid which they contained falls on the neighbouring parts, and thereby spreads the disease over almost the whole body, if proper remedies are not used to check its progress. Where the pustules are very large, and attended with much inflammation, they are apt to run into boils. The animalculæ which are seen in the pustules are the effect, not the cause of them: as all other stagnating fluids abound with microscopic animals.

The remedy which has been employed with the greatest success in the cure of this disease, is sulphur, which is not only used externally in the form of ointment, as in the unguentum sulphuris simplex, or that of the unguentum sulphuris compositum, which is more powerful, but is sometimes also given internally. As its external use, although very efficacious, is however attended with much inconvenience from the dirtiness of its application, as well as its disagreeable smell, other remedies are frequently substituted. The most efficacious of these are a solution of oxymuriate of mercury;* different combinations of the sulphuric

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* 1. ℞ Hydrargyr. Oxymuriat. gr. vj.
Ammon. Muriat. gr. x.
Aq. Distillat. f. ℥xij. M.
ft. Lotio.

* 1. Take Oxymuriate of Mercury, six grains.
Muriate of Ammonia, ten grains.
Distilled Water, twelve ounces.
Mix them for a wash.

acid,* white hellebore,† and a strong decoction of digitalis. In some cases of psora I have succeeded by employing merely a weak infusion of tobacco as a lotion two or three times a day.

Besides the hydrargyri oxymurias, other preparations of mercury have been employed with success, as in the formulæ specified below ;‡ should any of these occasion heat, rash, or other effects of too powerful a stimulus applied to the skin, they are to be relieved by substituting a little plain lard instead of the ointment, and this application is to be continued until the troublesome symptoms are perfectly removed.

That species of the itch which consists in small ulcers in the

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Vel,

2. ℞ Hydrargyr. Oxymuriat. gr. x.

Ovi Unius Vitellum.
Adipis Præpar. ℥ij. M.
ft. Unguentum.

* 3. ℞ Acidi Sulphurici, ℥ss.
Adipis Præparat. ℥j. M.
ft. Unguentum.

† 4. ℞ Veratri Pulv. ℥j.

Adipis Præpar. ℥iv. M.
ft. Unguentum.

Vel,

5. ℞ Rad. Veratri Contus. ℥j.

Aq. Puræ, Oij.
Decocque ad libram unam, et liquori frigefacto et colato adde
Spirit. Rectif. f. ℥ij. M.
ft. Lotio frequenter utenda.

Vel,

6. ℞ Decoct. Veratri, f. ℥xij.

Hydrargyr. Oxymuriat. gr. xij.

Ammoniæ Muriat. ℥j.

ft. Lotio.

‡ 7. ℞ Hydrargyr. Præcipit. Alb. ℥j.

——— Submur. ℥ss.

Sulphuris Loti, ℥ij.
Adipis Præparat. ℥ij. M.
ft. Unguentum, omni nocte horâ decubitûs applicandum.

Vel,

8. ℞ Hydrargyr. Præcipitat. Alb. ℥ij.

Plumbi Acetatis,
Potassæ Subcarbonat. āā gr. x.

Adipis Præparat. ℥ij.
Essent. Bergamot. ℥ xx. M.

ft. Unguentum.

Or,

2. Take Oxymuriate of Mercury, ten grains.
The Yolk of an Egg.
Prepared Lard, two ounces.
Make these into an ointment.

* 3. Take Sulphuric Acid, half a drachm.
Prepared Lard, one ounce.
Mix them, and use this as an ointment.

† 4. Take Powder of White Hellebore, one ounce.
Prepared Lard, four ounces.
Mix them for an ointment.

Or,

5. Take White Hellebore Root, bruised, one ounce.
Pure Water, two pints.
Boil them down to one pint, and add to the strained liquor when cool,
Rectified Spirit, two ounces.
Mix them, and use this lotion frequently.

Or,

6. Take Decoction of White Hellebore, twelve ounces.
Oxymuriate of Mercury, twelve grains.
Muriate of Ammonia, one drachm.
Mix them for a lotion.

‡ 7. Take White Precipitate of Mercury, one drachm.
Submuriate of Mercury, half a drachm.
Washed Sulphur, two drachms.
Prepared Lard, two ounces.
Mix them, and let some of this ointment be rubbed in every night about bed-time.

Or,

8. Take White Precipitate of Mercury, two drachms.
Acetate of Lead,
Subcarbonate of Potass, of each ten grains.
Prepared Lard, two ounces.
Essential Oil of Bergamot, twenty drops.
Mix them for an ointment, and use it in the same manner as the former.

skin is readily cured by an internal use of the acid of sulphur, which increases the cutaneous absorption. If its internal use fails, it may be employed externally mixed with lard, whereby a very elegant ointment is formed. The external application of sulphur, mercury, and acrid vegetables, acts on the same principle.

In that species of the disease which has been denominated psoriasis diffusa, the most beneficial effects have been derived from exhibiting the liquor arsenicalis, using warm bathing at the same time. The dose may be six drops three times a day, increasing it gradually to twelve or fifteen.

Such as are afflicted with the itch should be debarred the use of high-seasoned dishes, salted meats, fish of all kinds, and heating liquors; their diet consisting principally of vegetables and milk, with a small proportion of animal food. They should shift their linen frequently, and pay the greatest attention to cleanliness. When the unguentum acidi sulphurici is used, the parts to which it is applied should be covered with flannel instead of linen, on account of the destructive effects of the acid on vegetable substances.

In a paper read to the Medical Society at Paris, a new method of treating the itch has been proposed by Mons. Jadelot, of L'Hôpital des Enfans Malades, which is by employing a bath prepared by adding to twenty gallons of water, heated to about 98 of Fahrenheit's thermometer, four or five ounces of the sulphuret of potass. This bath is to be used once every day for five or ten days successively, according to the severity of the disease, the patient remaining in it nearly an hour each time. If used twice as often, bad cases may be cured in four or five days. Considerable advantages are regarded by Mons. Jadelot as attached to this plan, which is much adopted in the French hospitals.* The disease, he thinks, will be more expeditiously removed, and the cure more certain. It is less offensive, because the linen is not soiled with ointment, no sulphureous exhalation takes place from the patient, and the general habit is less impaired.

Fumigation has also been employed at Paris, by Dr. Gale, with success, in the cure of psora, and this mode he prefers to all others, particularly in very bad cases. The fumigation is produced by throwing half an ounce of sulphur mixed with two drachms of nitre into a warming-pan of hot coals, which is to be employed in the usual manner of warming a bed. The patient is then to strip naked and get under the clothes, which are to be closely tucked round his neck and shoulders, so as to prevent as much as possible the escape of the gas. The process is continued about seven nights, and even the worst cases may be cured in

* See Sketches of the Medical Schools of Paris, by J. Cross, p. 175.

this way, Dr. Gale says, without any inconvenience to the patient, who will usually sleep sound.

IMPETIGO, OR RING-WORM.

THIS is a cutaneous disease, chiefly occupying the scalp, but sometimes other parts of the body, and arises most frequently from coming much in contact or using the same comb, cap, or hat, with those already affected by it; but in some habits there seems a predisposition to it. It is a disorder more frequently met with in warm climates than in cold ones, is of a very contagious nature, and in inveterate cases is very difficult to eradicate.

It shows itself in small red pimples, which break out in a circular form, and contain a thin acrid fluid. When the body is heated by exercise these itch intolerably, and upon being scratched discharge their contents, which by falling on the neighbouring parts spread the disease to a considerable degree. The original size of the circle formed by the pimples is usually about that of a sixpenny piece; but in process of time it will become, by neglect, as large as the palm of the hand.

In some cases the disease is so universal that the habit becomes tainted; the skin puts on a leprous appearance, is much disfigured with blotches, and the unhappy patient enjoys not a moment's ease, from the intolerable itching and painful excoriations.

Where the disease is not of an inveterate nature it may easily be removed by washing the parts affected with some kind of restringent lotion;* and where this fails, recourse may be had to the wash composed of Prussic acid mixed with elder-flower water, or other remedies advised for the cure of herpes. In all impetiginous affections, Prussic acid (being a powerful sedative) properly diluted, is a very efficacious remedy for allaying the tingling and itching, which prove so highly distressing. The application of mushroom catsup to the pimples is reported to be a very efficacious remedy. A poultice of the flowers of the ring-worm bush, French guayava tree (cassia alata), is much employed in the West India islands, as are also lime juice and gunpowder.

It seldom happens that an internal use of medicine is necessary. Where the disease is very inveterate, some gentle alterative, such as the pilul. hydrargyr. submur. compos. with a decoction of the woods, may probably be most proper.—See Herpes.

Many of the schools in the vicinity of London, and indeed throughout the whole kingdom, have of late been much annoyed by the appearance of this disease among their youth under a very

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* 1. ℞ Zinc. Sulphat. ʒss.—ʒj.
Plumbi Acetis. gr. xv.
Aq. Distillat. f. ℥vj. M.

* 1. Take Sulphate of Zinc, half a drachm to a drachm.
Acetate of Lead, fifteen grains.
Distilled Water, six ounces.
Mix them for a wash.

inveterate form, and chiefly occupying the scalp. This peculiarity is owing, no doubt, to using the same comb for the infected and the healthy; and in this way it may very readily be communicated. By an inattention to this circumstance, I was once a witness of the disorder being very generally propagated through a large school of boys. They were in fact inoculated with the teeth of the comb imbued with matter from the head of the boy who was first affected, and who was an Indian or Creole lately arrived from the West Indies. A modern writer* has treated on this disease under the name of tinea capitis contagiosa, but in my opinion it is distinct from tinea.

The ring-worm generally appears on the head in a small circle of redness, which increases in diameter by degrees, and contracts a branny scurf, the hair separating at the roots from the slightest touch. After one circle has made its appearance, other similar circles may be expected soon to show themselves, till they reach one to another, and at length occupy the whole of the scalp. Unless proper means are resorted to in time, glandular swellings will ensue, and sometimes ulcerations.

When the scalp is much affected, the treatment to be adopted should be to shave the head every four or five days; to bathe it twice or thrice a day with a lotion of the sulphate of zinc or copper; and to apply every night a little of the unguentum hydrargyri nitratis, washing this off again the next morning, with warm water and soap and a bit of flannel. In inveterate cases, where glandular swellings or ulcerations attend, we may advise alteratives internally, such as the hydrargyri submurias.

ACNE, OR BLOTCHED FACE.

According to Dr. Willan's arrangement, acne belongs to the Order Tubercula, and the genus is characterized by an eruption of distinct, hard, inflamed tubercles, which are sometimes permanent for a considerable length of time, and sometimes suppurate very slowly and partially. They appear on the face, especially on the forehead, temples, and chin, and sometimes also on the neck, shoulders, and upper part of the breast; but never descend to the lower parts of the trunk, or to the extremities. As the progress of each tubercle is slow, and they appear in succession, they are generally to be observed at the same time in the various stages of growth and decline; and in the more violent cases are intermixed with the marks and vestiges of those which have subsided. The eruption occurs mostly in persons of the sanguine temperament, and in the early part of life, from the age of puberty to thirty or thirty-five. It is common to both sexes, but the most severe form of it is seen in young men.

* See Mr. Wm. Cooke's Treatise on Tinea Capitis Contagiosa.

Dr. Willan has noticed four varieties of this eruption, which he designates by the titles of acne simplex, punctata, indurata, and rosacea.

The acne simplex is an eruption of small vari which appear singly, and are not very numerous, nor accompanied by much inflammation, nor by any intermediate affection of the skin. Many of the tubercles do not proceed to suppuration, but rise gradually, become moderately inflamed, and again slowly subside in the course of eight or ten days, leaving a transient purplish red mark behind; but others go on to a partial suppuration, the whole process of which occupies from a fortnight to three weeks. The eruption recurs frequently at short intervals in some individuals; but in those who are more predisposed to it, it is more extensive, and perhaps never wholly disappears: at uncertain periods it is, however, more or less troublesome. Such persons often enjoy good health otherwise, and cannot refer the cutaneous complaint to any obvious exciting cause.

The affection being generally local, is to be treated by external applications, and the most proper are those of a gentle stimulating nature, such as lotions containing alcohol strengthened or reduced according to circumstances, by the addition of any distilled water, such, for example, as equal parts of spiritus tenuior and of rose or elder-flower water. If the tubercles are much inflamed and many of them pustular, the effect of a very acrid lotion would be to render them more confluent, and to produce the formation of a crust of some extent, as well as to excite an inflammatory redness in the adjoining skin.

As the inflammatory disposition subsides, an additional stimulus is often useful, such as from half a grain to one grain, or even more, of the muriate of mercury dissolved in each ounce of the spirit, or one drachm or more of the liquor potassæ, or of muriatic acid in six ounces. Diluted acetous acid and the liquor ammoniæ acetatis afford also an agreeable stimulant in proper proportions. Sulphur yields a small portion of its substance to boiling water poured upon it, and allowed to infuse for twelve or fourteen hours, a quart of water being added to about an ounce of broken sulphur. In slight cases a lotion of this nature has been found advantageous, and especially in removing the duskiness and roughness in the face connected with the disease.

Acne punctata. In this variety of the disorder the eruption consists of a number of black points, surrounded by a slight border of cuticle. These are vulgarly considered as the extremities of small worms or grubs, because when they are pressed out a sort of worm-like appendage is perceived attached to them, but in reality they are only concreted mucus or sebaceous matter, moulded in the ducts of the sebaceous glands into this vermicular form, the extremity of which is blackened by exposure to the air. In consequence of the distension of the ducts, the glands themselves sometimes inflame and form small tubercles with little black points

on their surface, which suppurate partially, as in the foregoing species; but many of them remain stationary for a long period, without ever passing into an inflammatory state.

These concretions may be extracted by pressing on both sides of the specks with the nails, until the hardened mucus is sufficiently elevated to be taken hold of. When the puncta are removed, the disease becomes acne simplex. and requires the same treatment with that species.

Dr. Underwood* has recommended the use of a solution of the subcarbonate of potass internally in these cases, and Dr. Willan was in the habit of occasionally prescribing the oxymuriatic acid. One or two tea-spoonsful of this liquid, taken in a glass of water three times a day, for a considerable period, has sometimes appeared to benefit the health, and improve the colour and smoothness of the skin; but medicines of this nature are seemingly more adapted to the subsequent species of the complaint, particularly the acne rosacea.

Acne indurata. The tubercles are larger as well as more indurated and permanent in this species than in acne simplex. They are of a conical conoidal form, and are occasionally somewhat acuminated, as if tending to suppuration, being at the same time of a bright roseat hue; but many of them continue for a great length of time in a hard elevated state without any disposition to suppurate. Others, however, pass on slowly to suppuration, the matter not being completely formed in them for several weeks, and then only a few of the tubercles are removed by that process. They are frequently very numerous: sometimes two or three coalesce, forming a large irregular tubercle, which occasionally suppurates at the separate apices, and sometimes only at the largest. In whatever mode they proceed, the vivid hue of the tubercles gradually becomes purple or even livid, especially in those which show no tendency to suppurate. Upon the suppurating tubercles slight crusts form, which after a time fall off, leaving small scars surrounded by hard tumours of the same dark red colour, and these sometimes suppurate again at uncertain periods; and sometimes slowly subside and disappear, leaving a purple or livid discoloration, and occasionally a slight depression, which is long in wearing off.

The tubercles, even when they do not suppurate, but especially while they continue highly red, are always tender to the touch, so that washing the face, shaving, the friction of the clothes, &c. produce pain. The disease in its most severe form exhibits the eruption nearly covering the face, breast, shoulders, and top of the back, but does not descend lower than the ordinary tippet in female dress.

The general health does not usually suffer even under this

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* See his Observations relative to Grubs, in his Treatise on the Diseases of Children, vol. ii. p. 167, fifth edition.

aggravated form of the eruption. Many persons, however, who are affected with the eruption are liable to disorders of the bowels and stomach, to hæmorrhoids, and some to phthisis pulmonalis. Its first appearance too is frequently ascribed to some irregularity of diet, or to some cold substance swallowed when the person has been overheated and was in a free perspiration. Hence the appearance of the first eruption is not unfrequently somewhat sudden.

By a steady use of external stimulants, combined with a proper regulation of diet and exercise, the acne indurata is often greatly alleviated, and sometimes entirely removed. Even from the begining the eruption will bear a more acrid stimulus than in the inflamed acne simplex. A spirituous lotion, at first a little diluted, and containing the oxymuriate of mercury in the proportion of a grain, or somewhat less, to the ounce of the vehicle, is often extremely beneficial. An empirical preparation, vended under the name of Gowland's lotion, which is generally supposed to contain this mercurial salt in an emulsion of bitter almonds, has been much used, and where its strength happens to accord with the degree of irritability in the eruptions, it is doubtless beneficial in this species of the disease. Many other stimulants* may be substituted with a similar effect. In general it will be found requisite to augment the activity of all these applications in the progress of the treatment, partly in consequence of the diminished effect of an accustomed stimulus, and partly on account of the increasing inertness of the tubercles, as the inflammatory state subsides, which must be determined by the appearances.

Frequent purgatives, which are often resorted to, are of no advantage, but on the contrary only tend to augment the disease in feeble habits. The copious use of crude vegetables in diet, which the misapplication of the term "scurvy" has introduced, is likewise to be deprecated, as well as the free use of vegetable acids, especially in constitutions predisposed to indigestion. It is a fact not easy to explain, that under many modifications of cutaneous inflammation, especially about the head and face, inflammation is immediately increased in sympathy with the offended stomach, when these substances are taken. In cases of acne indurata, the diet should be good, light, and nutritious, but not stimulating, consisting of animal food, with well-dressed vege-

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* 1. ℞ Ol. Amygdal. f. ℥j.
Liquor. Potassæ, f. ℥ij.
Aq. Rosæ, f. ℥viss. M.

ft. Lotio ter quaterve in die utenda.

Vel,

2. ℞ Misturæ Amygdal. Amar. f. ℥vss.
(Vide Herpes.)
Spirit. Camphoræ, f. ℥ss. M.

ft. Lotio.

* 1. Take Oil of Almonds, one ounce.
Solution of Potass, 2 drachms.
Rose Water six ounces and a half.

Mix them. Let this wash be used three or four times a day.

Or,

2. Take Mixture of Bitter Almonds (see Herpes), 5 ounces and a half.
Camphorated Spirit, half an ounce.

Mix them for a wash.

tables, and the farinacea, wine and fermented liquors being omitted, or taken with great moderation.

Internally medicines are generally supposed to effect very little, but in some inveterate cases an increased amendment* has been observed, when, in addition to the external treatment already noticed, small doses of soda, sulphur and antimony,† were at the same time administered, and by which plan, duly persevered in, the skin has been perfectly cleared.

Acne rosacea. This species of acne differs in many respects from the preceding. In addition to an eruption of small suppurating tubercles, there is also a shining redness, and an irregular granulated appearance of the skin in that part of the face which is affected. The redness commonly appears first at the top of the nose, and afterwards spreads from both sides to the cheeks. At the commencement it is not uniformly vivid, but is paler in the morning, and readily increased to a deep and intense red after dinner, or at any time, if a glass of wine or spirits be taken, or the patient be heated by sitting near the fire, or by active exercise. After some continuance in this state, the texture of the cuticle becomes gradually thickened, and its surface uneven or granulated, and variegated by reticulations of enlarged cutaneous veins, with smaller red lines stretching across the cheeks, and sometimes by the intermixture of small suppurating tubercles, which successively arise on different parts of the face.

Acne rosacea does not often occur in early life, except where there is a great hereditary predisposition to it: in general it does not appear before the years of five-and-thirty or forty; but it may be produced in any person by the constant immoderate use of wine

* See Dr. Bateman's Practical Synopsis of Cutaneous Diseases, p. 288, 3d edition.

Vel,

3. ℞ Misturæ Amygdal. Amar. f. ℥vj.
Hydrargyr. Oxymuriat. gr. iv.
Solut. in
Spirit. in Rorismar. f. ℥j. M.
ft. Lotio partibus affectis ter in die applicanda.

† 4. ℞ Sulphur. Loti, ℥ss.
Sodæ Subcarbon. ℈j.—℥ss.
Antimon. Tartarizat. gr. $\frac{1}{6}$th. M.
ft. Pulvis mane nocteque sumendus.

Vel,

5. ℞ Sodæ Subcarbon. gr. xxv.
Sulphur. Loti, ℈ij.
Pulv. Antimon. gr. j. M.
ft. Pulvis bis in die adhibendus.

Or,

3. Take mixture of Bitter Almonds, six ounces.
Oxymuriate of Mercury, four grains.
Dissolved in
Spirit of Rosemary, one ounce
Mix them. Let the parts affected be washed with a little of this lotion 3 times a day.

† 4. Take Washed Sulphur, half a drachm.
Subcarbonate of Soda, from one scruple to half a drachm.
Tartarized Antimony, the sixth of a grain.
Mix them. This powder is to be taken morning and night.

Or,

5. Take Subcarbonate of Soda, twenty-five grains.
Washed Sulphur, two scruples.
Antimonial Powder, one grain.
Mix them, and take this powder twice daily.

and spirituous liquors. In such cases the greater part of the face, even the forehead and cheeks are often affected, but the nose especially becomes tumid, and of a fiery red colour; and in an advanced life it now and then enlarges to an enormous size, the nostrils being distended, or the alæ fissured, as it were divided into separate lobes. At this period of life, too, the colour of the acne rosacea becomes darker and more livid; and if suppuration takes place in any of the tubercles, they are apt to put on an unfavourable appearance, and do not readily assume a healing disposition.

In young persons however, who are hereditarily predisposed to this complaint, irregular acrid patches not unfrequently appear in the face, which are often smooth and free from tubercles, and sometimes throw off slight exfoliations at intervals. If great temperance both in food and drink be not observed, these patches may be gradually extended until the whole face assumes a preternatural redness.

No danger, and but a trifling inconvenience, accompanies acne rosacea, but those afflicted with it are usually solicitous to have it removed. For this purpose strong restringents and sedatives, such as a solution of the plumbi acetas, are often employed; but although these succeed in repressing the eruption, they are apt to aggravate the internal disorder, and to give rise to severe headach and other unpleasant complaints. Moreover, the stimulants which are beneficial under proper regulations in most of the other forms of acne are generally prejudicial in this, by greatly aggravating it. Where restringents are applied externally to the patches of reticulated veins, such only as very dilute spirituous or acetous lotions, with or without a small proportion of the acetate of lead; or simple ointments combined with alum, acetate of lead, &c., in very small quantities, should be used.

The perfect cure of this species of acne is seldom accomplished; for whether it originates in a strong hereditary predisposition, or from habitual intemperance, the difficulties in the way of correcting the habit of body are nearly insurmountable. The regulation, however, of the diet is important in both: when the stomach or liver is disordered, the symptoms may sometimes be palliated by the liquor potassæ or other antacids, such as soda, &c., which seem also to have some influence in lessening inflammatory action in the skin. It will be advisable to keep the bowels regular and open by some gentle laxative, if they are torpid. A slight course of the submuriate of mercury, joined with antimony, as in the pilulæ hydrargyri submuriatis, with a decoction of sassafras, or elm bark, might in some cases possibly prove serviceable. The liquor arsenicalis has sometimes been found beneficial: the patient may begin with eight drops twice a day, gradually increasing the dose to fifteen or twenty.

Should a severe headach, impaired sight, or other il effects arise from a recession of the cutaneous eruption in consequence of

restringe ts being applied externally, the insertion of an issue of one or two peas between the shoulders might be advisable.

CHIGRE.

The chigre is a kind of small sand-flea, which proves very troublesome in the West Indies, by insinuating itself into the soft and tender parts of the fingers and toes more usually than into other parts of the body, particularly under the nails, where it continues to increase in size, causing no farther pain than a disagreeable itching and heat. In process of time, however, a small bag or bladder is formed, in which are deposited thousands of nits or ova, that become so many young chigres, and if not speedily extracted, create running ulcers. Some people have lost their limbs by amputation, nay, even their lives, by having neglected to root out these vermin in proper time.

The moment, therefore, that an itching, redness, and heat, more than usual, are perceived in any part affected with a chigre, it will be advisable to extract it. This is usually done with a sharp-pointed needle by some dexterous negro, who picks out the insect, and if a cyst is formed, endeavours to take out this whole also; for by breaking it, troublesome ulcers are sometimes formed. The cavity is then usually filled up with tobacco-ashes or snuff.

In very inveterate cases, where from neglect either the hands or feet are much beset with chigres, it may be necessary, after the extraction of the several cysts, to wash the parts with a strong decoction of tobacco, or a solution of the sulphate of copper.

PERNIO, OR CHILBLAIN.

Chilblains are painful inflammatory swellings, of a deep purple or leaden colour, to which the fingers, toes, heels, and other extreme parts of the body are subject on being exposed to a severe degree of cold. The pain is not constant, but rather pungent and shooting at particular times, and an insupportable itching attends. In some instances the skin remains entire, but in others it breaks and discharges a thin fluid. When the degree of cold has been very great, or the application long continued, the parts affected are apt to mortify and slough off, leaving a foul, ill-conditioned ulcer behind.

Children and old people are more liable to be troubled with chilblains than those of a middle age; and such as are of a scrofulous habit are remarked to suffer severely from them.

The best mode of preventing these affections is to avoid with much care any exposure to wet or cold; wherefore those who are subject to them should be cautious, on the approach of winter, to

cover the parts which are apt to be injured with woollen gloves and stockings, and not expose the hands or feet too precipitately, when cold, to a considerable degree of heat.

In common cases of chilblains, as soon as any part is perceived to be affected, it will be proper to rub it well with warm spirits of rosemary, to which a small addition of oil of turpentine has been made; after which we may apply pieces of soft linen, moistened with camphorated spirits, or any of the embrocations here advised,* and they are to be kept on constantly.

When the swellings break and discharge a thin matter, or ulcerate, poultices and emollient ointments may be applied for a few days; but as these are apt to induce fungous excrescences over the sores which it will be difficult afterwards to remove, they should not be persisted in long. The occasional application of caustic to the edges, and dressing the sore daily with the unguentum hydrargyri nitratis, will effectually prevent any luxuriancy of granulation. Should this be found of too escharotic a nature, its strength may easily be reduced, by a small addition of the unguentum cetacei.

DISEASES NOT REFERRIBLE TO ANY PARTICULAR CLASS.

VERMES, OR WORMS.

THE human body is infested with three kinds of worms, viz. the ascarides, or small white worm; the teres, or round worm; and the tænia, or tape-worm, which is flat, consists of many joints, and

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* 1. ℞ Aluminis, ℥ij.
Acid. Acetici, dilut.
Spirit. Tenuior. āā Oss. M.

Vel,

2. ℞ Liniment. Camph. C.
——— Saponis, āā f. ℥ss.
Ol. Terebinth. f. ℥iij. M.

Vel,

3. ℞ Liniment. Sapon. Comp. f ℥iss.
Tinct. Cantharidis, f. ℥ij. M.

Vel,

4. ℞ Liniment. Sapon. Comp.
Liquor. Ammon. Acetat. āā f. ℥j.
M.

* 1. Take Alum, two drachms.
Distilled Vinegar,
Proof Spirit, of each half a pint.
Mix them.

Or,

2. Take Compound Camphor Liniment,
Soap Liniment, of each half an ounce.
Oil of Turpentine, three drachms.
Mix them.

Or,

3. Take Compound Soap Liniment, one ounce and a half.
Tincture of Spanish Fly, two drachms.
Mix them.

Or,

4. Take Compound Soap Liniment,
Solution of Acetate of Ammonia, of each one ounce.
Mix them.

is usually of a considerable length. The last is, however, more rarely met with in this country than the others; but in Germany and Switzerland the inhabitants are much troubled with it. Different situations of the intestines have been mentioned as being occupied by each kind, particularly the rectum as the seat of the ascarides, where they are observed always involved in mucus; the teres occupy the small intestines, and sometimes the stomach; the tenia the whole intestinal tube, more especially the ilium.

Unwholesome food, with a bad digestion, seems to be the principal cause of worms. They appear most frequently in those of a relaxed habit, and whose bowels contain a preternatural quantity of mucus or slimy matter. Hence it is a disease most common to children; but they sometimes prevail in adults to a very high degree, particularly in those who live chiefly on a vegetable diet. The tape-worm is not often met with in infancy or childhood; instances of it do, however, now and then occur. Some physicians entertain the opinion that intestinal worms do not arise from a weak or impaired digestion, and a consequent combination of matter capable of converting itself into such worms, but that they are introduced into the human body mixed with the food or drink, and find in the intestines an appropriate place for their existence.

Worms may readily be distinguished by the following symptoms, viz. variable appetite, fetid breath, acid eructations, and pains in the stomach, grinding of the teeth during sleep, picking of the nose, paleness of countenance, hardness and fulness of the belly, slimy stools, with occasional griping pains, more particularly about the navel, heat and itching about the anus, short dry cough, emaciation of the body, slow fever, with evening exacerbations, and irregular pulse, and sometimes convulsive fits.

It is often a very difficult matter to expel worms from the body, but more especially the tænia. When they prove fatal, it is by their erosion of particular parts, and their inducing a tabid state.

In the cure of this disease we must have in view, first, the effecting the destruction and discharge of the worms; and, secondly, the preventing their future generation.

The first of these is to be accomplished by certain remedies known by the name of vermifuges, which all act in one of the three following ways:—

1st, By simple evacuation or purging, as mercury, rhubarb, jalap, and aloes; as also the different strong bitters, as rue, tansy, and wormwood.

2dly, Mechanically, as the pulvis stanni, cowhage, &c.; or,

3dly, Chemically, as lime-water, which loosens their adhesion to the intestines, by dissolving the mucus in which they are involved.

We may begin with those which act mechanically,* and which have been found the most powerful; and after continuing them for two or three days, we may have recourse to those which have a purgative effect,† changing both after a continuance of some time for those which act chemically.‡ Along with those which act mechanically it will be proper to employ some kind of bitter infusion.‖

If these means prove ineffectual, we may then make use of the Indian pink root, or spigelia, which has on many occasions been

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* 1. ℞ Stanni Limatur.
Confect. Cassiæ, āā ℥ss.

Syr. Simpl. q. s. M.
ft. Electuarium, cujus sumat magnitud. nucis moschatæ bis in die.

Vel,

2. ℞ Dolichi Pub. gr. vj.—x.

Limatur. Stanni, gr. x. M.
ft. Pulvis, mane et nocte capiendus cum syrupo, aut melle permixtus.

Vel,

3. ℞ Dolichi Pub. gr. vj.—x.

Mel. Optim. vel Theriac. q. s. M.
ft. Bolus bis in die adhibendus.

Vel,

4. ℞ Dolichi Pub. ℥j.
Syrup. Simpl. q. s. M.
ft. Electuarium. Capiat cochl. minimum mane primo per dies tres.

† 5. ℞ Hydrargyr. Submuriat. gr. iij.—v.

Pulv. Rhei, gr. x. M. ft. pulvis. Quarto mane sumendus.

Vel,

6. ℞ Pulv. Jalapæ, gr. x.
Hydrargyr. Submuriat. iij. M.

Vel,

7. ℞ Olei Ricini, f. ℥ss.—f. ℥j. pro dos.

‡ 8. ℞ Liquor. Calcis, Oss. in die.

‖ 9. ℞ Rad. Gentian. Contus.
Fol. Absinth.
—— Rutæ,
Cort. Limon. āā ℥ij.
Aq. Ferventis, Oj.
Macera per horam, et cola. Hujus infusi sumat cochl. magna iij. bis terve in die.

* 1. Take Filings of Tin,
Cassia Confection, of each half an ounce.
Syrup, a sufficiency.
Mix them. Of this electuary the bulk of a nutmeg may be taken twice a day.

Or,

2. Take the Down of Cowhage, from six to ten grains.
Filings of Tin, ten grains.
Mix them. This is to be taken night and morning, mixed with a little syrup or honey.

Or,

3. Take the Down of Cowhage, from six to ten grains.
Honey or Treacle, a sufficiency to form a bolus, which is to be given twice a day.

Or,

4. Take Down of Cowhage, one drachm.
Common Syrup, a sufficiency.
Form an electuary, of which take a tea-spoonful every morning for three days, on an empty stomach.

† 5. Take Submuriate of Mercury, three to five grains.
Powdered Rhubarb, ten grains.
Mix them. This purgative powder is to be taken on the fourth morning after any of the preceding vermifuge medicines.

Or,

6. Take Powder of Jalap, ten grains.
Submuriate of Mercury, three grains.
Mix them for a cathartic.

Or,

7. Take Castor Oil, from half an ounce to one ounce for a dose.

‡ 8. Take of Lime Water, half a pint in the day.

‖ 9. Take Gentian Root, bruised,
Wormwood Leaves,
Rue Leaves,
Lemon Peel, of each two drachms.
Warm Water, one pint.
Infuse them for an hour, and then strain off the liquor. Of this infusion three table-spoonsful may be taken twice or thrice a day.

found a very powerful medicine. About ten grains of the powder may be given morning and night to a child of eight or ten years old, to which age the doses of the preceding remedies are adapted. The spigelia is without doubt a poisonous and narcotic vegetable, and it is in all probability by virtue of this poisonous quality that it proves so beneficial in cases of worms.

By a proper use of cowhage (the *Dolichos pruriens* of Linnæus,) with the submuriate of mercury combined with a jalap, or the oleum ricini every third or fourth morning as a purgative, we seldom, however, shall have occasion to seek relief from any other medicine, as in several hundred cases where I had used it, during my practice in the West Indies, I never knew it once to fail. It appears to have been but lately introduced into this country, which, considering its wonderful vermifuge powers, is somewhat surprising.

The stizolobium or dolichos is a plant like the vine, long, slender, and creeping. The leaves thin, pointed, and covered with a down. The flowers grow in clusters, and are followed by a pod, somewhat similar to the common pea in shape and size, and containing several purple beans. The pods are thickly covered by a very fine stiff-pointed down similar to hairs, which, upon being applied to the skin, produces an intolerable itching, and it is only this downy portion of the plant that is employed to destroy worms.

A decoction of the Geoffræa inermis, or cabbage-bark, is another remedy much used in the West Indies, but more particularly in Jamaica, for destroying worms, and often with a very happy effect.

For the destruction of ascarides it is very usual to throw up injections into the rectum that will prove obnoxious, and thereby dislodge them. Any of those recommended below* may be tried.

Turpentine has been used also with success in the form of clyster. About two drachms of the oil, blended with a decoction of oatmeal, may be thrown up at a time.

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* 10. ℞ Liquor. Calc. tepid. f. ℥x. pro enemate.

Vel,

11. ℞ Fol. Rutæ,
— Absinth. āā ℥ss. Coq. ex
Aq. Puræ, Oj. ad ℥x.
Colat. adde
Ol. Ricini, f. ℥ss. M.
ft. Enema.

Vel,

12. ℞ Dolichi Pubis, gr. x.
Decoct. Avenæ, f. ℥vj.
ft. Enema.

Vel,

13. ℞ Aloes Vulgaris Extract. ℥j.
Decoct. Avenæ, f. ℥x.

* 10. Take Lime Water of a tepid warmth, ten ounces for an injection.

Or,

11. Take Rue Leaves,
Wormwood Leaves, of each half an ounce.
Boil them in a pint of water until reduced to ten ounces, strain off the liquor, and add
Castor Oil, half an ounce.
Mix them for a clyster.

Or,

12. Take Down of Cowhage, ten grains.
Thin Gruel, six ounces.
Mix them for a clyster.

Or,

13. Take Common Aloes, one drachm.
Thin Gruel, ten ounces.
Mix them for a clyster.

An injection of the down or hairy part of the stizolobium, mixed in a little thin gruel, might possibly have a very good effect. Dr. Darwin has proposed the introduction of a piece of candle up the rectum well smeared with mercurial ointment, as a likely method to destroy ascarides.

A peculiar mode of employing tobacco in cases of worms has been recommended by Dr. Barton,* and which we are informed by him has in many instances produced very happy effects. The leaves are pounded with vinegar, and applied in the shape of a poultice to the region of the stomach or abdomen. "In consequence of this application, worms are often discharged," he mentions, "after powerful anthelmintics have in vain been administered internally." A similar practice I know is adopted in the West Indies, where it is usual to apply a cataplasm of the expressed juice of the aloe-tree to the abdominal region, for the purpose of dislodging worms, and I have observed that in many cases the remedy seemed to prove a powerful auxiliary to other means. Its efficacy has extended, however, only to cases of the round worm.

The male fern, or filix mas, which forms the basis of Madame Noufler's celebrated remedy, is a medicine which has been much extolled for its destructive powers to the tape-worm, which, of all others, proves the most difficult to expel from the body. The dose for an adult is from one to two drachms. After two doses, it will be right to give a purge of the submuriate of mercury and jalap, in about the proportion of five grains of the former to five-and-twenty of the latter.

The oil of turpentine, it appears,† has recently been administered with a very good effect in some cases of tape-worm, having caused many feet in length of the animal to be brought away or expelled.

For a delicate female, the proper dose will be an ounce; for a robust female or small man, an ounce and a half; and for a robust man, two ounces. The best vehicles for it appear to be milk and thin gruel. It should be taken early in the morning on an empty stomach. Purging will be produced by it, and this speedily. When the dose is considerable, it may be advisable to direct the patient to drink plentifully of emollient liquors, with the view of sheathing the stomach and kidneys.

* Reported in vol. viii. page 423, of the Medical and Physical Journal.
† Reported in No. 131 and 132 of the Medical and Physical Journal. See Transactions of the London Medical Society, vol. i.

Vel,
14. ℞ Tabaci, ℥j.—℥ss.
Aq. Fervent. ℥x.
Post semihoram col.

Or,
14. Take Tobacco Leaves, from one scruple to half a drachm.
Warm Water, ten ounces.
Infuse them for half an hour, and then strain off the liquor for a clyster.

The pomegranate root has also been found a very efficacious remedy* for destroying the tape-worm.

Sulphureous waters, such as those of Harrowgate, in this country, and of the islands of Jamaica and Nevis, in the West Indies, have been found, when drunk upon the spot, to be very good anthelmintics.

Harrowgate water is a safe and powerful remedy against the round worm and ascarides, when taken in such a dose as to prove a brisk purgative; and in the latter case, when used likewise as a clyster, the ascarides being chiefly confined to the rectum, and therefore within reach of this form of medicine.

Common salt was administered by Dr. Rush as an anthelmintic remedy, with some success; and by some other physicians it has been thought to possess a power destructive to worms. Those who do not make use of it with their food have been observed to be much predisposed to these vermin.

Such as are afflicted with worms should abstain from all crude vegetables and unripe fruits, making their diet consist chiefly of animal food that is light, nutritive, and easy of digestion.

After a proper course of the vermifuge medicines which have been advised, we should employ such others as have a tendency to strengthen the stomach and intestines, in order to prevent any worms from being generated in future; a relaxation of these parts being a constant attendant on the disease. The most proper tonics are the cinchona bark, astringent bitters, and chalybeates: various forms of which will be found under the head of Dyspepsia.

Of POISONS.

Poisons are of four kinds—mineral, vegetable, aërial, and animal. Mineral poisons are to be distinguished from vegetable ones by their action. The former corrode, stimulate, or inflame; the latter generally stupify, and leave no marks of inflammation. None of the mineral poisons terminate life, till after a most excrutiating operation of two or three hours at least; whereas some of the vegetable class destroy it in a few minutes. From the animal poisons the distinction is as striking; for although in the plague the mouth and throat are frequently affected in the same way, yet the local disease of the stomach is never present. The aërial poisions operate still more quickly than any of the other classes, and their action on respiration is so peculiar, that it can never be mistaken.

* See Edinburgh Medical Journal for January 1807.

Of the MINERAL POISONS.

The chief of the mineral poisons are lead, nitrate of silver, tartarized antimony, acids, alkalies, arsenic, and some of the preparations of mercury. Most of the latter are active medicines, and when given in improper doses, several prove violent poisons, such as the nitrous oxyd of mercury, the red oxyd, and the oxymuriate.

The effects of lead when introduced into the stomach and bowels, are languor, tremors, cholic, palsy, convulsions, and death, as already noticed under the heads of Colica Pictonum and Palsy.

An overdose of tartarized antimony sometimes occasions death, producing at first violent vomiting, a languid and almost imperceptible pulse, coldness of the extremities, insensibility and not unfrequently convulsions.

Where arsenic has been administered, or taken perhaps in a mistake for some other medicine of a similar colour and appearance, a pricking and burning sensation will soon be experienced in the stomach, sudden and excruciating pains will be felt in the bowels, a severe vomiting will arise, the tongue, mouth, and throat will become rough and parched, and an unquenchable thirst will prevail, with much anxiety and restlessness. If the dose has been considerable, and the poison not quickly evacuated from the stomach, or proper antidotes have not been employed in time, an inflammation of the alimentary tube will be the consequence, which will soon terminate in gangrene, giving rise to much distention of the abdomen, coldness of the extremities, fetid vomiting and stools, hiccups, and lastly, the death of the person.

A case reported in the 5th volume of the Medical and Physical Journal, p. 543, shows, that arsenic, as well as some other metallic poisons, may be taken into the system by the absorbents, and thereby produce very baneful effects on the constitution.

There are two theories entertained with respect to the mode in which arsenic operates: the one is, that its deleterious properties are owing to the action of its sharp spiculæ on the stomach; the other, that it has a peculiar action on the nervous system. Neither of these seems, however, to be true to the extent meant to be inculcated.

The effects produced by swallowing oxymuriate of mercury in a considerable dose, are pretty similar to those occasioned by arsenic. It produces sickness, severe griping pains in the stomach and bowels, excessive vomiting and purging of frothy mucus, sometimes mixed with blood, distention of the belly, suppression of urine, coppery taste and heat in the mouth and throat, great thirst, cold sweats, anxiety, and death. When the patient survives the immediate agency of this poison, he is not

unfrequently affected with sloughing of the mouth and gums, fetid breath, salivation, and extreme debility.

The red precipitate and red oxyd of mercury produce violent purging and vomiting, pains in the stomach and bowels, and other very distressing effects.

From all poisons of the mineral class, more or less danger is always to be apprehended; but the degree will ever be in proportion to the quantity which has been swallowed, and to the time which has elapsed previous to any assistance being given.

Dissections of those who have died in consequence of any mineral poison, such as arsenic, or the oxymuriate of mercury, show that the alterations of structure occasioned by them are, that the mouth, stomach, and intestines are usually inflamed; that the stomach and duodenum sometimes present grangrenous spots, eschars, and perforations of their coats; that the villous coat of the stomach now and then appears as if destroyed, and reduced to a state of reddish brown dough: finally, that all the other viscera are more or less inflamed. It is said that arsenic produces a resistance to putrefaction, as some bodies, which have been examined many days after the persons had been poisoned, discover neither putrescence nor fœtor.

When an animal is killed by arsenic or the oxymuriate of mercury taken internally, the stomach is usually found to bear marks of inflammation, as has just been observed; and it is a very general opinion that this inflammation is the cause of death, and that it is the consequence of the actual contact of the arsenic with the internal coat of the stomach; but we are told by Mr. Brodie,* that, as a general proposition, the first of these opinions is incorrect, as he has found in several cases the inflammation of the stomach so slight, that on a superficial observation it might have been easily overlooked; and that in most of his experiments with the poison of arsenic, death has taken place in too short a time for it to be considered as the result of inflammation. He is of opinion that vegetable substances, when applied to wounded surfaces, affect the system by passing into the circulation through the divided veins: and he thinks that arsenic, in whatever way it is administered, does not produce its effects on the stomach until it is carried into the blood. In short, that the symptoms produced by arsenic may be referred to the influence of the poison on the nervous system, the heart, and alimentary canal.

In all cases of poison, arising either from arsenic, oxymuriate of mercury, lead, or any other mineral, that has been swallowed in a liquid or dissolved state, it will be necessary to procure as speedily as possible an evacuation of the contents of the stomach by means of Mr. Jukes's valuable apparatus, if at hand or soon

* See his Observations on the Action of Poisons on the Animal System; which were read before the Royal Society in February 1812.

to be procured, taking care to wash out this viscus well by afterwards injecting two or three syringes of tepid water, for the more effectual purpose of diluting and bringing away every particle of the poisonous matter. But if Mr. Jukes's machine is not to be obtained quickly, or the poison has been taken or administered in a solid form, as in a pudding, dumpling, &c., then the stomach must be emptied immediately by means of a strong emetic;* the patient drinking freely afterwards of diluting liquors, such as a decoction of barley, with gum. acaciæ, mutton and veal broths, linseed-tea and milk, in order to wash out the stomach, as well as to sheathe the parts, and prevent their being acted upon by the particles of the poisonous matter.

With the same intention, oil is not only frequently administered by the mouth, but likewise thrown up into the intestines in the form of clyster, mixed with a decoction of emollient herbs.

It appears, however, from numerous trials, that when arsenic is given to animals combined with oil, butter, or other fatty substances, they are destroyed much more quickly than when it is given in an aqueous vehicle. The use of fat bodies ought therefore to be interdicted during the first moments in cases of such a poison, and mucilaginous and gelatinous substances be employed in their stead.

Alkaline salts have been found to diminish the injurious effects of mineral poisons, and therefore in accidents of this nature it will always be advisable to make use of them soon after the evacuation of the contents of the stomach, either by mechanical means or an emetic. For the purpose, dissolve about an ounce of the subcarbonate of potass in half a gallon of water, and give the patient a tea-cupful frequently.

Where none of these salts are at hand, then a small quantity of wood-ashes, mixed up with boiling water, so as to make it of a sufficient strength, may be substituted, suffering the liquor to stand until it settles, and then filtering it through linen for use.

Fresh charcoal powdered fine, has (it is affirmed) been found an efficacious medicine in obviating the deleterious effects of arsenic on the stomach and intestines.

The subcarbonate of magnesia has been recommended as a good

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* 1. ℞ Zinc. Sulphat. gr. xv.—ʒss.

Pulv. Ipecac. gr. x. M.
ft. Pulvis statim sumendus.

Vel,

2. ℞ Antimon. Tartarizat. gr. ij.
Zinc. Sulphat. gr. xv.—ʒj.

Aq. Puræ, ʒj. M.
ft. Haustus Emeticus.

* 1. Take Sulphate of Zinc, from fifteen grains to half a drachm.
Powder of Ipecacuanha, 10 grains.
Mix them, and let this powder be taken immediately.

Or,

2. Take Tartarized Antimony, 2 grains.
Sulphate of Zinc, from fifteen grains to one scruple.
Pure Water, one ounce.
Mix them for an emetic draught.

remedy to counteract the deleterious effects of arsenic; but from some experiments reported in the London Medical Repository,* it appears that calcined magnesia does not decompose the white oxyd of arsenic, but, on the contrary, that it combines with it, and forms a soluble arsenite of magnesia, which has not a feeble action on the human frame, as is too generally supposed. From these experiments, it appears that chalk, and also lime-water, destroy the deleterious effects of an over-dose of a solution of the white oxyd, if taken in time, and are likely even to suspend or greatly lessen the action of the poison swallowed in a solid form, if aided by plentiful dilution. Lime-water is recommended by Orfila,† who proved by experiments that the arsenite of lime (formed by pouring lime-water into a solution of white oxyd of arsenic) is insoluble, and when swallowed is not poisonous.

Of all antidotes to the poison of the oxymuriate of mercury, we are informed by the French writer‡ before referred to, that he found albumen (which is only the white of egg dissolved in water and filtered) to be the most powerful and efficacious. It is to be properly diluted with water previous to use. By mixing gelatine with oxymuriate of mercury, it is said to render the latter innoxious. In cases of poison by this drug, gelatine, either fresh or dry, should therefore be promptly resorted to. In defect of these remedies, milk, gum-water, decoction of linseed, mallow, or sugar and water, should be taken in abundance. The fulness of the stomach will produce vomiting, and consequently an evacuation of the poison, which is more to be relied on than chemical remedies.

On the principle of removing inflammation in cases of mineral poisons, it may be advisable to employ copious bleeding, (if not contra-indicated by the state of the circulation,) together with the application of a large blister to the epigastric region, keeping the bowels open at the same time with frequent doses of the oleum ricini. A successful case of this nature is recorded in the 2d volume of the London Medico-Chirurgical Transactions.

Indeed when inflammation is only commencing from the absorption of the mineral, and the morbid symptoms have not yet reached to any alarming height, it would appear, that after having administered an emetic to clear the stomach of the poisonous particles, assisted by copious dilution, with mild and mucilaginous fluids, and then an active purgative to evacuate the bowels, blood-letting is a remedy obviously pointed out.

In cases where the poison of verdigris has been recently swallowed, emetics should first be given; and afterwards cold water, gently alkalized, ought to be drunk in abundance.

By experiments made on animals by the French writer just

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* See No. 44, p. 157.

† See Traité des Poisons, par M. P. Orfila, Docteur en Médecine, tome i. partie i.

‡ — the same.

quoted, it was ascertained that sugar exercises a chemical action on verdigris, and renders it insoluble in water. It was therefore used by him and others as an antidote to verdigris, and was found in all cases of this poison to allay the pain and other alarming symptoms, and to produce an immense quantity of liquid stools.

Those who have eaten provisions prepared in a copper vessel badly tinned, are occasionally attacked a short time afterwards with symptoms characteristic of the poisonous effects of the metallic substance, in which cases the exhibition of charcoal has proved highly beneficial when other remedies have failed.*

To obviate the deleterious effects of lead, the remedies to be employed are opium, where there is much pain and spasm, the warm bath, laxatives, such as castor oil, or the sulphate of soda or magnesia, purgative clysters, &c. and gentle emetics. When the body is open, the hydro-sulphate of potass or ammonia, or the sulphuret of potass, should be given, largely diluted with barley-water or gruel. Common flower of sulphur may be taken with advantage in any agreeable form, followed by as large a quantity of diluted alkali as the stomach can bear.

Muriate of soda counteracts the corrosive effects of the nitrate of silver, and it is the best antidote. A person suffering under the deleterious effects of this, should drink several glasses of a solution of the muriate of soda, in the proportion of a table-spoonful of the salt to two pints of water. Vomiting will ensue, and the symptoms will diminish. Should they continue, recourse should be had to emollient drinks and fomentations; as also leeches to the abdomen.

Milk is the best antidote of muriate of tin, by which it is completely coagulated. The coagulum contains muriatic acid and oxyd of tin, which is not deleterious.

It has been observed that an over-dose of tartarized antimony sometimes produces severe consequences. In such cases our chief dependence is to be placed on mucilaginous and diluent drinks, speedily to remove the medicine from the stomach; and when this is done, opium, and perhaps blisters, may be of some service. M. Orfila conjectures, that a decoction of the cinchona bark and strong tea may aid in counteracting the injurious effects of an over-dose of tartarized antimony.

In all cases of poison by the sulphuric, nitric, or muriatic acids, calcined magnesia will be the best remedy, as soda and potassa are somewhat irritating. The patient should take, as soon as possible, a mixture of the subcarbonate of magnesia and water, in the proportion of an ounce of the former to a pint of the latter. Of this a glassful should be swallowed every four or six minutes, in order to favour vomiting, and prevent the acid from acting on the coats of the stomach. Pure magnesia should not be given, as when suddenly added to concentrated sulphuric acid, prodigious

* See Journal Gen. de Médecine for April 1815.

heat and vapour are excited. Subcarbonate of magnesia has not this effect, and is therefore the proper remedy. When the subcarbonate of magnesia is not at hand, half an ounce of soap dissolved in a pint of water should be given.

After promoting vomiting and neutralizing the acid, our next object is to obviate the inflammation likely to ensue; and with this view several leeches, and afterwards fomentations, should be applied to the abdomen. If prompt relief be not obtained by these means, assisted by a warm bath, blood is to be drawn from the arm in greater or less quantities, according to the urgency of the symptoms. All food is to be prohibited for the time. Diluents, such as milk, linseed-tea, and gruel, are to be taken plentifully, and laxative clysters injected frequently. During convalescence, a return to the usual diet ought to be very gradual.

Acetic acid, or vinegar diluted with water, is the best antidote against the effects of an over-dose of any alkali.

The success of the treatment of all cases of mineral poisons will depend in a great measure on the sort of regimen the patient observes during his convalescence, which is frequently long and painful. He ought to be principally nourished by milk, gruel, farinaceous preparations, and nutritive broths. Great thirst usually accompanies such occurrences, which may be allayed by frequently washing the mouth with cold water, this being preferable to drinking any quantity of watery liquors, lest vomiting should be excited or kept up thereby.

The following are the tests by which arsenic may be discovered in the contents of the stomach, where it has been administered as a poison. First, if a few grains of it are thrown on a red-hot iron, a smell like garlic will be perceived. 2dly, If a few grains are placed between two plates of copper, and subjected to a red heat, the copper becomes whitened. 3dly, Where the quantity is sufficient, some wheat may be steeped in a solution of it, and which, if given to chickens or small birds, will destroy them.

A simple and efficacious means for detecting the presence of arsenic is that of Bergman. It consists in infusing a portion of the suspected matter in a solution of vegetable alkali: after standing an hour or two, pour upon it a portion of the sulphate of copper. If any arsenic is present, the copper will be immediately converted into a beautiful green, and will soon be precipitated. In this way, water, or the contents of a stomach supposed to contain arsenic, may be examined.

The precipitation of arsenic from any fluid in which it is dissolved, may also be made by an alkaline hydro-sulphuret.

Another process for discovering the presence of arsenic is by combining it with silver. This test has been strongly recommended by Mr. Hume of Long Acre, under the title of the ammoniaco-nitrate of silver, and is thus prepared: dissolve a few grains, say ten, of the nitrate of silver, called lunar caustic, in about nine

or ten times its weight of distilled water; to this add, by a drop at a time, a solution of ammonia, till a precipitate is formed. Continue to add the ammonia, now and then shaking the bottle, till the precipitate shall be taken up, and the solution again become transparent, or nearly so, as the ammonia need not be in great excess, if in any; for a solution of ammonia being lighter than water, the superfluous portion would remain on the surface of any fluid to which this test liquor may be applied.

This simple liquid, if kept in a phial with a glass stopper, will not easily spoil. Its application is very simple; for nothing more is required than to dip a strip of glass into this liquor, and apply it to the solution containing arsenic. Should the material suspected to contain arsenic be of a dry nature, such as a mixture of sugar, meal, bread, meat, or any other kind of food, let some boiling water be poured on the suspected substance, and filtrate the solution through paper. If a bright yellow colour appear on presenting the nitrate of silver, we may conclude, without reserve, that there is arsenic in the mixture under examination. It is said by Mr. Hume, that this test, by proper management, will prove the existence of white arsenic, even if dissolved in more than four hundred thousand times its weight of water.

A solution of chromate of potass is reported to be another excellent test of the presence of arsenic. One drop of it is turned green by the fourth of a grain of arsenic, by two or three drops of the mineral solution, or any other arsenite of potass.

It is of great importance to employ boiling water in examining the vomited matters and contents of the stomach, in cases of poisoning by arsenic. By Klaproth's experiments, it appears that one part of the white oxyd requires four hundred parts of water, at 59° Fah. for its solution; although one hundred parts, which had been boiled on white oxyd of arsenic and cooled down to 59°, retains three grains of the oxyd in solution. This is contrary to Bergman's opinion, and adopted by many chemical writers, which states, that one part of white oxyd is soluble in fifteen parts of boiling water, and in eighty of cold.

For discovering the oxymuriate of mercury, the methods almost exclusively resorted to are, its precipitation by means of one of the fixed alkalies, such as the subcarbonate of potass, or the carbonate of soda, or by lime-water, which will detach it under the form of an orange-coloured, or orange yellow, sediment. Nitrate of tin is a very delicate test, as one drop only produces an immediate and copious dark brown precipitation. The matter vomited, and contents of the stomach, should be collected for the purpose of being examined by these tests.

The oxymuriate of mercury is white, and may be known by its metallic and peculiarly styptic disagreeable taste. It is soluble in about twenty times its weight of water, but readily so in a small proportion of alcohol. A solution of the oxymuriate of mercury,

even although very weak, instantly tarnishes polished silver immersed in it, and gives it a dull pewter colour, not easily removed.

The presence of lead may be detected by adding a little sulphuric acid, which will precipitate the mineral in the form of a white powder. Sulphuret of potass or lime may also be employed, which will occasion a blackish deposit. If, on the addition of a solution of the sulphate of soda or potass to the suspected fluids, a precipitate occurs, we may conclude they contain lead; these tests produce a white precipitate in water, containing one hundred thousand of its weight of lead, and are considered by Dr. Thomson as the most unequivocal re-agents of that metal we possess.

The test for discovering lead in wines (which are sometimes adulterated by the dealers with this mineral,) is as follows:—Put into a phial 16 grains of sulphuret of lime, prepared in the dry way, and 20 grains of acidulous tartrate of potass or cream of tartar. The phial is then to be filled with distilled water, and shaken for ten minutes, the clear liquor then decanted, and kept in a well-stopped bottle for use. This, when fresh prepared, gives a dark coloured precipitate, if lead is present in wine.

When copper is taken into the stomach, the beautiful blue colour produced in its solutions by pure ammonia, is the most decisive and satisfactory evidence that can be required.

Such are the tests by which the practitioner will be enabled to form his opinion with tolerable accuracy, (if called upon to appear before a court of judicature,) in most cases of supposed poison by any mineral. In those which admit of the smallest doubt, we should never fail to attempt a reproduction of the poison in its metallic state, by evaporating the fluid with which it may be supposed to be mixed or held in solution, this being the surest and most accurate. Most other tests are liable to some distrust in cases of supposed poison by arsenic, inasmuch as it has been demonstrated, that similar results will be obtained from them where it is obvious none of this mineral could be present.*

The following mode of reproducing the white oxyd of arsenic is simple and easy, but it is necessary to have a quantity that is tangible. When white arsenic is mixed with carbonaceous or unctuous matter, and then exposed to a red heat in a glass tube closed at the end, it will be sublimed in the form of shining metallic scales; and then exposed to the air under the heat of ignition, will burn with a blue flame, and revert to the common white oxyd.†

Before I quit this subject, it may not, however, be amiss to notice a peculiar appearance which is now and then met with in

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* See Edinburgh Medical and Physical Dictionary, under the head Arsenic.
— the Trial which took place at Launceston in Cornwall, before Chief Justice Abbott.

† See Marshall on Arsenic.

the stomach on dissection, and which, in a case of judicial investigation might be mistaken by the inexperienced practitioner for the effect of some mineral poison. I allude to the dissolved or eroded state in which a portion of this organ is at times found on anatomical inspections, and solely occasioned by the gastric juice. Several well-authenticated instances have lately been brought forward, proving satisfactorily a solution of the coats of the stomach, either partly or wholly, by this secretion. Such a solution is most frequently met with in those who have been suddenly deprived of life when in full health, a circumstance first noticed by the late Mr. John Hunter: but still the occurrence is not confined to such cases alone; it has been found in those who have died of lingering and debilitating diseases.* This, however, is in contradiction to the opinion of some practitioners who have written on the subject; for they hardly conceive it possible that the coats of the stomach can be dissolved, in a person labouring under a state of debility at the time of death, by the gastric juice.

In the case of the young woman at Liverpool, whose body was opened under the supposition of being poisoned, and for which a trial was instituted, a hole of considerable size was discovered in the stomach; but as no particles of any metallic poison were found, and one of the physicians who was examined as an evidence, suggested the possibility of the erosion being occasioned by the gastric juice, the prisoner† was acquitted. The case and result gave rise to much medical controversy at the time.

Those who would wish to acquit themselves with credit and accuracy when called upon to appear as evidences before a court of judicature, will do well in consulting the Treatises on Forensic Medicine, by Dr. John Gordon Smith, Dr. Male, and Dr. Paris and Fonblanque.

Of VEGETABLE POISONS.

The vegetable poisons are very numerous, and consist of two classes; the narcotic or stupifying, and the irritant or stimulant. Opium, hyoscyamus, belladonna, digitalis, hemlock, stramonium,

* See Mr. Burn's Observations on Digestions of the Stomach after Death, in the 22d Number of the Edinburgh Medical and Surgical Journal.

† Several experiments made by Dr. Bostock of Liverpool, in consequence of the acquittal of this person, and recorded in the 17th Number of the Edinburgh Journal, ought to have some influence in all judicial proceedings where the question of poisoning is agitated. He found that an animal may be suddenly killed by receiving a metallic poison into the stomach, and yet that the nicest tests may not be able to detect any portion of the poison after death in the contents of the stomach. A poison may, I think, produce fatal effects, and yet be so completely evacuated by vomiting and purging as to leave no trace, discoverable by chemical analysis, in the contents of the alimentary canal. A case reported in the 26th Number of the Edinburgh Journal, by Dr. Henry, confirms this opinion.

aconitum, laurel, cassava-root in its crude state, and several fungi, particularly the small agaric, (denominated by the French champignon, and somewhat resembling mushrooms,) belong to the first class; whereas, colchicum autumnale, hellebore, savin, and cocculus indicus, come under the latter class. Those of the first occasion stupor, sleep, and death, and occasionally vomiting, purging, and convulsions; those of the latter class produce pain, inflammation, and erosion.

Many of the former, and particularly the champignons, are often taken through mistake, and prove poisonous. The same happens frequently in the West Indies from using the cassava-root in its crude or unprepared state. In this state, it proves a deadly poison; but by having its acrimonious juice carefully expressed, and being afterwards baked into thin cakes, it becomes a wholesome and nutritive kind of bread, much used in most of the islands, as also in Africa. Such is the wonderful effect produced by fire over this plant.

The following are the indications by which the mushroom tribe that are of a suspected nature may be distinguished. All those may be regarded as suspicious and of a dangerous quality which grow in marshy shaded places, as thick forests, where the sun has no access; their substance is softer, more open, more porous, and moister than edible mushrooms. They have, besides, a more disagreeable appearance, and a more or less humid and dirty-looking surface. Those also which are dusky and change colour when cut, or which exhale a strong unpleasant odour, or have a gaudy colour, or many very distinct hues, particularly if they have been originally covered by an envelope, and are found in shady places, ought not to be eaten. Those which have short bulbous stalks, or fragments of skin adhering to their surface, or which grow rapidly and corrupt very quickly, should also be rejected. It has generally been supposed that fungi lose their deleterious properties by being dried; but this is a rule to which there are many exceptions, and which ought therefore to be very cautiously admitted.*

The symptoms occasioned by all poisonous substances of the vegetable class are, giddiness, confusion of sight, wildness of the eyes, palpitations, loss of memory and voice, stupor, nausea, vomiting, great distension of the stomach, universal twitchings, and convulsions.

The bodies of those who have been destroyed by vegetable poisons generally swell prodigiously, soon become offensive, and covered with livid gangrenous spots. On opening the body, the viscera are usually found in a sound state, but the veins are full and distended, the blood remarkably fluid, and the arteries empty. When nightshade has occasioned death, the intestines are generally inflated and inflamed, or corroded and gangrenous.

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* See Traité des Poisons, &c., par Mons. Orfila.

In accidents from vegetable poisons we must attempt the immediate evacuation of the offending matter from the stomach; and where opium, in a state of solution (as in the tinctura opii,) has been swallowed in any quantity, either through mistake or with the view of destroying life, its removal will be best effected by employing Mr. Jukes's valuable apparatus, taking care well to wash out the stomach after the poison has been evacuated, by injecting two or three syringes-ful of tepid water, so as to clear it thoroughly of the laudanum. Where this machine is not at hand or promptly to be procured, the stomach must be evacuated of its deleterious contents by an active emetic, and the most proper one will be a strong solution of the sulphate of zinc with tartarized antimony, as advised under the head of Mineral Poisons. Where the patient is in a state of complete insensibility and incapable of swallowing, the emetic solution may be injected into the stomach by means of an elastic gum catheter introduced into the œsophagus from the right nostril. It is, however, only quickly after opium or any other powerful narcotic has been swallowed, that an emetic can be given with advantage, as the patient's efforts in vomiting might increase the dangerous determination of blood to the head.

In some cases of poison by opium, or such other powerful sedatives, occasioning great torpor in the stomach, so as to resist the effects of even strong emetics introduced into that organ, a scruple or half a drachm of tartarized antimony dissolved in a little water, and thrown up the intestines in the form of a clyster, has excited vomiting, and at the same time freely evacuated the entire alimentary tube. In very obstinate constipations, eight or ten grains of the medicine administered in this way, will commonly be found sufficient to effect the desired purpose.

A very singular case is related in the French Dictionary of Medical Sciences, among the Cas Rares, of a man 60 years of age, who swallowed a piece of meat which stuck in the œsophagus, near the lower end of the tube. Alarming symptoms followed quickly, but the surgeon could not displace the foreign body. He opened the median vein in the arm, and injected four grains of tartarized antimony dissolved in an ounce of water. About a minute afterwards, the patient vomited up the piece of meat. Query, Might not the same plan be adopted with advantage in cases of poison from opium and other powerful narcotics, where the patient is deprived of sensibility or the power of swallowing, or where there prevails very great torpidity of the stomach? For the operation in question, a syringe of peculiar construction will be requisite in order to avoid throwing air into the blood-vessels.

To counteract the effects of the poison, the patient should be made to drink, after vomiting has been excited, but not before, if possible, of liquors strongly acidulated with the juice of lemons, vinegar, or sulphuric acid, giving the preference however to the

former. These fluids should be given in small doses, and be repeated every ten minutes.

Contrary to the generally received opinion that vinegar and the vegetable acids are antidotes to the poison of opium, a French writer* concludes, from the results of a series of experiments upon dogs, that these acids aggravate the symptoms of poisoning by opium, by dissolving the greater quantity, and thereby increasing its narcotic power, when the poison has not been rejected by vomiting; but he found if the poison has been vomited, that then vinegar and vegetable acids possess the property of diminishing the symptoms of the poison, and even altogether overcoming them. No experiments, however, have been made upon the human body of the like nature, to prove whether a similar result would ensue. It will, however, be most advisable to excite vomiting by a powerful emetic previous to a use of acids.

In urgent cases of persons of a robust and plethoric habit suffering under the influence of opium, opening the jugular vein in preference to any other will be advisable, as by this means only can the dangerous accumulation of blood in the brain be relieved. Bleeding unnecessarily might however not only retard, but endanger the recovery of the patient.

For the purpose of rousing the system from a state of torpor, particularly in cases where an immoderate dose of laudanum or opium has been taken, the patient is to be kept in constant motion on his legs, if capable of standing; but if not, by frequently shaking and moving his body. We may at the same time assiduously rub different parts of it with warm salt and other stimulating applications. If these means fail, the cold affusion of water copiously employed and directed chiefly on the head, neck, and chest, may be attended with better success; in addition to which means it has been recommended to stimulate different parts of the body with the down of the dolichos pruriens, or cowhage. By these, the patient will often be roused from a state of perfect stupor so as to enable his medical attendant to give him a strong emetic, and other medicines which may be deemed necessary to counteract the effects of the poison.

To assist in producing such a degree of irritation as shall counteract the soporific quality of the poison, a large blister may be put between the shoulders, and sinapisms to the palms of the hands and soles of the feet. The nostrils may be irritated from time to time with a feather dipped in the liquor vol. cornu cervi.

With the like view of obviating the torpor of the stomach, and stimulating the whole system, it would appear advisable to give considerable doses of ammonia. Indeed we are informed by a modern writer,† that he has observed where any of the narcotic poisons, particularly opium or hyoscyamus, has been swallowed,

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* See Traité des Poisons, &c. par Mons. Orfila.

† See Dr. Stone's Treatise on the Diseases of the Stomach.

and an alarming stupor has continued for many hours, notwithstanding every effort made by the by-standers, a spoonful of a strong solution of ammonia has awakened the patient, and enabled him by words to express the benefit he has received from it; and by a repetition of the medicine, as the stupor returns, the sensibility and irritability have been gradually restored.

There can be no doubt but that strong stimuli will be necessary as soon as the effects of the one constituting the disease are observed to be subsiding, and the system discovers marks of sinking. In this state we ought, therefore, not only to employ frictions externally with salt, as have been directed, and excite the action of the intestinal tube by irritating clysters, but we should give ammonia, with as much brandy as can be got down into the stomach, even by tea-spoonsful at a time.

Where the cause of death is the cessation of the functions of the lungs, as in cases of suffocation, inflating these organs is generally recommended. Possibly the same mode of treatment might be employed with advantage as an auxiliary for the recovery of persons labouring under the effects of opium and other vegetable poisons.

Cases of poisoning by henbane, and other vegetable narcotics, require much the same kind of treatment as those by opium or its preparations.

In cases of poisoning by fungi, Mons. Orfila advises that the stomach and bowels should be first cleared as quickly as possible by a mixture composed of three or four grains of tartarized antimony, twenty-four grains of ipecacuanha, and from six drachms to one ounce of the sulphate of soda, with a proportionate quantity of water. Castor oil may afterwards be given, and likewise purgative clysters. The poison being freely evacuated, spoonsful of a potion containing a large dose of æther should then frequently be swallowed, and recourse be had to mucilages and other demulcents, should the patient complain of any pain in the abdomen. If the poison, however, has been taken long before the assistance of the practitioner is required, and inflammation has already come on, then such evacuants would not be proper: bleeding and other antiphlogistic means must be resorted to.

Vinegar is useful only when the poisonous fungus has been expelled by vomiting; but as long as it remains in the stomach the reverse is said by this able writer to be the case, as the acid dissolves the poisonous principles, and thereby facilitates its absorption. Muriate of soda (common salt) acts in the same manner as vinegar; and, therefore requires to be employed under the same limitations. Sulphuric æther, as it also takes up the poisonous part of the fungi, should not be used previous to the evacuation of the stomach, but afterwards it will be of great utility. Volatile alkali is more hurtful than salutary, and oil, butter, and milk, are useless in this kind of poison.

Several cases of accidental death have of late occurred from

taking oxalic acid in a mistake for common purging salts, to which it indeed bears a strong resemblance. This acid is used in various domestic purposes, particularly for cleaning boot-tops and other articles of leather, and persons using it are too apt to leave it about in a careless manner.

The appearances on dissection of those who are destroyed by this poison, are as follow:—the cuticular coat of the œsophagus peels off with the slightest effort; the blood-vessels of the inner coat of the stomach appear as if injected with a carbonaceous substance; the stomach itself is in some cases so perforated that its contents escape into the cavity of the abdomen, whilst the other part is so tender that it tears with the slightest force: the spleen and other parts contiguous to the stomach, by the acid falling upon them, also become in part destroyed.

From some experiments made by Dr. Thomson,* it appears, that oxalate of lime does not produce any deleterious effect when swallowed; and that a mixture of chalk and water, if taken, by producing oxalate of lime in the stomach where oxalic acid has been previously swallowed, may be regarded as the antidote of that acid when exhibited very soon after the poison has been swallowed.

Of all the chemical antidotes to the poison of oxalic acid, magnesia appears to be the best; and it is even preferable to the carbonate of lime, which is apt to occasion considerable inconvenience on account of the sudden extrication of a large quantity of carbonic acid gas. Magnesia will afford nearly instantaneous relief from the burning pain in the stomach, and if it be administered very early, may prove an effectual antidote, but, like all other antidotes, be of little use after the delay of many minutes.

The most certain way of preventing mischief will be first to evacuate the stomach of the poison by means of Mr. Jukes's machine, and then to throw in the magnesia afterwards.

Of AERIAL POISONS.

Aerial Poisons are frequently the cause of death, but more frequently by accident than design.

The fumes arising from many of the metals in a state of fusion or a rial solution are extremely pernicious. Those from arsenic cause dryness of the tongue, a sense of suffocation, headach, vomiting, &c., and by long exposure, pulmonary consumption is a frequent consequence. The fumes from mercury are highly deleterious: they occasion salivation, tremors, paralysis, and extreme weakness. Those arising from lead occasion asthma, pains in the chest and body, paralysis, &c.

* See No. 17, p. 388, of the London Medical Repository.

The external appearances of persons suffocated by the deleterious fumes arising from charcoal, coke, or fermenting liquors (carbonic acid gas,) as well as in consequence of sleeping in unventilated apartments, or respiring the foul air of wells, privies, caverns, and mines, are as follow :—the head, face, and neck are swoln : the eyes are propelled from their sockets ; the tongue is protruded at one side of the mouth ; the jaws are firmly closed ; the face is of a livid, and the lips are of a deep blue colour ; the abdomen is inflated ; the body is insensible to pain, and the person appears to be in a profound sleep.

The first symptoms which the patient experiences on inhaling air vitiated with these deleterious fumes are, giddiness, headach, lethargy, fainting, convulsions, and general torpor.

Immediately on discovering a person who has been suffocated by any kind of deleterious fume, the windows and doors ought to be thrown open, and the body undressed and exposed freely to cool air, being supported at the same time in a leaning posture on a chair : after a little time it must be covered with flannel or blankets, the face be sprinkled with vinegar, and the pit of the stomach with cold water. Vinegar properly diluted with cold water may be introduced into it through a flexible catheter. The legs may also be put into a cold bath ; and as it is a well-known fact, that the recovery of the dogs which are made the subjects of experiment in the Grotto del Cani, is much favoured by their being plunged into a neighbouring lake, possibly a sudden immersion of the whole body in cold water might be of service. After each application of vinegar and water, the skin ought to be rubbed with flannel or a soft brush, the temples and inside of the nostrils be stimulated by applying volatile spirits, and bottles filled with warm water be laid to the soles of the feet, then leaving the person for a few minutes in an undisturbed state. Farther, clysters consisting of vinegar and water will be useful ; and on the return of life an inclination to vomit should be promoted by a feather dipped in oil, while gentle friction is to be continued at intervals. The first symptoms indicating this happy change will be foaming at the mouth and shivering of the whole body, especially after affusions of cold water.

Where the means which have been mentioned fail in reanimating the patient, it will be advisable to employ the united powers of electricity or galvanism, repeated shocks of either of which, particularly the latter, may be passed through the chest. Blood-letting, and the artificial introduction of air into the lungs by means of a pipe or bellows adapted for the purpose, are also to be tried. If these efforts prove successful, so that the patient seems again to breathe, he may then inhale oxygen gas. When he is able to swallow, the most proper drink will be vinegar and water, or some other acidulated liquor.

The body should not be deserted whilst there is any hope ; and

hope should not be abandoned speedily, as persons have recovered after lying in an insensible state for some days.

Pits, wells, deep vaults, &c. should never be entered immediately after they are opened. It will be a good precaution first to let down a lighted torch or candle, for where these will not burn, animal life cannot long be sustained.

In Russia the common people are frequently deprived of sensation by vapours arising from the following cause :—Persons of rank in that country have double windows to their houses in winter, but those of the poorer classes are only single. During frosty weather, an incrustation is formed on the inside of those windows, from a condensation of the breath, perspiration, &c. of a number of persons living together in the same room. This mephitic crust is mixed with the noxious fumes of candles, and of the stove with which the chamber is heated. When a thaw succeeds, and this plate of ice is converted into water, a deleterious principle is disengaged, which produces effects similar to those arising from the fumes of charcoal.

The method of recovering persons affected by this effluvium is as follows :—They are immediately to be carried out of doors and placed on the snow, with no other covering but a shirt and linen drawers. Their temples and the region of the stomach are then to be well rubbed with snow, and cold water is to be poured down their throats. The friction is to be continued till the livid hue of the skin disappears, and the surface acquires its natural colour.

The carburetted hydrogen gas or fire damp which is formed in large quantity at the bottom of coal pits, though not properly considered as a poison, is frequently the cause of the death of many of the miners by unexpected explosion. An apparatus has been contrived by Sir Humphrey Davy,* and also by Dr. Murray, for preventing these dreadful effects, by consuming the gas.

Of ANIMAL POISONS.

Several of these have already been mentioned, and their mode of operation noticed, under the heads of Hydrophobia, Syphilis, Cancer, and Contagion. It only therefore remains to treat of the poison of prussic acid, venomous snakes, the viper, and some peculiar kinds of fish, the last of which in warm climates is frequently attended with fatal consequences.

Prussic acid being artificially obtained by the decomposition of animal substances, is generally deemed an animal acid, but it exists in a natural state in bitter almonds, the kernels of apricots, the leaves of laurel and peach blossoms, from whence it may be extracted by distillation. It has a sweet taste, smells like bitter

* See Philosophical Magazine, for December 1815.

almonds, and is highly poisonous in improper doses; producing the same effects on the animal system as laurel water, such as convulsions resembling epilepsy, paralysis, and death; but in the dose of two or three drops, is a valuable medicine in the whooping and other convulsive coughs, and has been supposed serviceable in phthisis.—See this disease for the best mode of administering it.

Alkaline salts and other stimulants are proper remedies for an over-dose of prussic acid. The spirit of ammonia largely diluted with water should be forced down the throat to the extent of two or three drachms. As diffusible stimuli, brandy, æther, and camphor, may also be employed.

In many parts of India persons working in the fields are often bitten by venomous serpents; and as no puncture is to be observed very frequently, the poor fellows* are apt to attribute the uneasiness at first to the pricks of thorns, thistles, &c. A few minutes, however, never fail to exhibit the real state of the case; the unfortunate victim becoming sick, with cold sweats and stupor, and gradually sinking, perhaps occasionally convulsed, into the arms of death. Few, we are told, survive more than half an hour, and some die within a few minutes.

The symptoms which attend on the introduction of the poison of the rattle-snake into the blood are:—nausea; a full, strong, agitated pulse; swelling of the whole body; eyes much suffused with blood; sometimes copious bloody sweats; and often hæmorrhages from the eyes, nose, and ears; the teeth chatter; and the pains and groans of the sufferer indicate approaching dissolution.

The poison of this reptile is generally of a yellowish, somewhat greenish colour, which becomes darker in hot weather. During the coupling season it is observed to be more active or virulent than at any other. So deadly are its effects, that it has been known to kill a dog in a few minutes.

When a person has been wounded by a venomous snake, the first step to be adopted is, to pass a tight ligature above the injured part (where capable of such an application,) so as to prevent the further absorption of the virus into the system, and then to evacuate that which has already been admitted by sucking the wound, as practised by the Creek Indians with impunity, and by afterwards promoting discharges of blood and serum from it by means of scarifications, cupping, excision, or the application of caustic.

In bites of the rattle-snake, cobra di capello, &c., cutting out the wounded part as quickly as possible, and afterwards immersing the limb in warm water so as to encourage the bleeding, together with the internal use of opium to allay irritation and pain, have in some instances proved a successful mode of treatment.

Soap-lees, volatile alkali, and the spiritus ammoniæ succinatus,

* See Oriental Field Sports.

and eau de luce, have all been found excellent applications to wounds inflicted by the rattle and other venomous snakes, provided they have been used immediately after the accident. The last remedy is likewise used internally in the East Indies in the proportion of a tea-spoonful to a wine-glassful of water, and by being repeated a few times, is said to be attended with a happy effect. The fresh juice of the rattle-snake plantain, applied to a wound of this nature, is said to be a powerful antidote against the poison of this reptile.

We are told by Captain Carver, in his Travels through North America, that so convinced are the Indians of the power of this antidote, that for a trifling bribe of spirituous liquor they will at any time permit a rattle-snake to drive its fangs into their flesh. He likewise speaks of salt as an effectual remedy against the bite of this reptile, provided it is applied immediately to the wound in a strong solution.

When through neglect the venom has been absorbed, all that can be done is to excite a strong perspiration by means of emetics and powerful sudorifics. This, we are informed by Dr. Barton,* is effected in a violent degree by the juice of the garden-rue, which the Indians in Jersey give in the dose of two table-spoonsful every two hours.

Where this is not to be obtained, or ready at hand, we may advise large doses of Venice treacle, with volatile aromatic spirit and æther, which may be frequently repeated, the patient drinking a little warm rum and water after each.

The use of oil, as a remedy for the bite of serpents, was long ago recommended in the Philosophical Transactions of the Royal Society of London; but from subsequent experience it seems to have received no sanction. Of late, however, its efficacy has been asserted, in cases of the bite of the rattle snake, by Mr. J. Miller, of Pendleton county, North America. He observes, that, in a great number of instances, olive-oil, taken inwardly, in the quantity of a few spoonsful, and applied also to the bitten part, has proved itself fully adequate to the worst of cases, if timely exhibited.

In bites of other venomous serpents, the same mode of treatment must be adopted as has just been advised. The aristolochia, or snake-wood, taken inwardly in the form of infusion, and applied externally in that of poultice, is much used by the negroes against venomous bites; as is also a species of grass called chicken-foot, which is commonly mixed up by them with a little salt and spirits, so as to make a cataplasm of a proper consistence.

Dr. Bancroft mentions, in his History of Guiana, that the general remedy for the bites of poisonous animals is a cataplasm of the pulp of lemons mixed up with sea-salt, and applied to the

* See Transactions of the American Philosophical Society, held at Philadelphia, vol. iii.

wounded part; and this he has frequently found of use when previous scarification had been employed.

In the sixth volume of the Asiatic Researches, there is a communication on the poison of serpents, by W. Boag, Esq.; and, after having taken an extensive view of the ancient methods of effecting a cure thereof, all shaded with doubt and suspicion, he ultimately recommends, as a specific in this dreadful malady, the argenti nitras, a remedy long ago proposed by Fontana; who mixed the venom with this caustic, and found that it was thereby rendered entirely innocent. Mr. Boag supposes that the poison of serpents acts upon the blood by subtracting the oxygen which it receives from the atmosphere in its passage through the lungs, and upon which its vitality depends.

In the second volume of the same work, page 323, we are favoured with an account, by J. Williams, Esq. of the surprising efficacy of a remedy against the deleterious effects of the bite of several snakes, and especially of the cobra di capello. It consists in the external application to the bitten part, and likewise internal exhibition, of liquor ammoniæ. We are told, that the remedy has been found to put a sudden stop to the baneful effects of the poison of this reptile, and possibly that it may have a similar power in the bites of the rattle-snake, viper, &c. In the bite of a rabid animal, when the patient will not consent to have the wounded part excised, or even after it is cut out, this remedy might be tried.

Poisonous serpents are best distinguished from those that are innoxious, by an accurate inspection of their teeth; the poisonous ones, or fangs, being usually of a tubular structure, and furnished with a small hole or slit near the tip: they are rooted into a particular bone, so jointed to the rest of the jaw on each side as to permit the fangs to be raised or depressed at the pleasure of the animal. Above the root of each is a glandular reservoir of poisonous matter, which, in the act of biting, is pressed into the tube, and discharged into the wound through the hole near the tip. In general, the fangs are single on each side, but sometimes they are double and even triple. There are usually small or young fangs, situated at the base of the larger ones, ready to grow up and supply the place of any which may be lost by accident or violence. It may be said, that innocent serpents have four rows of teeth in the upper jaw, two on the palate, and the rest on each side; but that poisonous serpents have no outward or side teeth but the fangs. Dr. Russel tells us,* that in serpents not venomous there are three rows of common teeth in the upper jaw; in the poisonous kinds the external row is wanting.

The symptoms which attend on a bite of the viper are, acute pain in the wounded part, together with a considerable degree of swelling, that is at first red, but which afterwards becomes livid,

* See his Account of Indian Serpents.

and diffuses itself over the neighbouring parts. After a short time the constitutional symptoms make their appearance; the person becomes faint, the pulse is small and intermitting, nausea and vomiting ensue, the skin has a yellow tinge, and death not unfrequently is the consequence.

The treatment to be adopted in a case of this nature must be pretty similar to that which has been advised for the bite of the rattle-snake, viz. preventing the absorption of the matter into the system by means of a ligature above the part, and destroying the virulence of that which has been introduced into the wound, by scarifications, cupping, excision, caustic, or the application of soap-lees, volatile alkali, or the spiritus ammoniæ succinatus; employing strong diaphoretics internally at the same time, in order to determine to the surface.

As an external application, a poultice of quick-lime with oil and honey has been recommended, as has likewise a cataplasm of garlic. This last has also been given internally with advantage.

The bite of the snake or adder of this country is attended with symptoms of a similar nature, but they are not so violent, neither does it often prove fatal. Much the same treatment is to be adopted as in the former cases.

Europeans, on their first going out to the West Indies and other tropical situations, usually suffer very much from the bite of moschetoes. They are a species of gnat, and on whatsoever part these pitch, they immediately produce small tumours, which are attended with so high a degree of itching and inflammation, that the person cannot refrain from scratching; by a frequent repetition of which he not uncommonly occasions them to ulcerate, particularly if he is of a robust and full habit.

To allay the itching and inflammation, the parts may be bathed frequently with a solution of opium in water, or with the liquor plumbi acetatis sufficiently diluted. The liquor ammoniæ subcarbonatis is likewise a good application. It will at the same time be necessary to make use of some cooling laxative and a spare diet.

Where pustules arise on the parts that have been bitten, opening them with a lancet about the third day, and letting out the watery matter, will be proper.

Those who suffer much from the bite of these insects should wear gloves and long linen trousers by day, in order to defend the extremities from their attacks; and by night they should sleep under the cover of a net, which, being usually made of thin lawn or gauze, is perfectly cool, and effectually shuts them out.

The topical applications for the bites of scorpions, centipedes, spiders, and wasps, are the same as advised for those of moschetoes. Olive-oil is, however, much made use of also as an external application.

The lytta vesicatoria, or Spanish fly, is sometimes administered as a medicine, but when taken internally, either in tincture, infu-

sion, or substance, except in very small doses, is apt to occasion very violent effects, as furor uterinus, involuntary emissions, strangury, bloody urine, violent pain, inflammation and ulceration of the stomach, bowels, and bladder, tenesmus, delirium, convulsions, and death.

The remedies to be resorted to are oil, milk, diluent drinks, as gruel and linseed tea, drank plentifully and thrown up by clyster. The same may also be injected into the bladder. As an internal medicine, opium joined with castor oil may be tried, in moderate doses frequently repeated.

In this country some kinds of fish, such as eels, salmon, herrings, and, in peculiar constitutions, muscles, lampreys, and even lobsters, independently of their putrescency, give a singular irritation to the system, and, during their digestion in the stomach, occasion a considerable efflorescence on the skin, sometimes partial, and at other times over the whole body; sometimes with a considerable febrile disorder, and at other times with very little. In warm climates we however meet very frequently with fish possessed of the most deleterious quality. The barracuda (perca major), king-fish (xiphias), cavallee (scamber), rock-fish (perca marina), smooth bottle-fish (ostracion glabellum), and yellow-bill sprat, are the fish most to be dreaded. The latter possesses a poisonous virus to an extent almost incredible, and has in several instances been known to destroy life in the space of half an hour by exciting dreadful convulsions. The conger eel, as likewise the large white land-crabs, that feed on the leaves of the manchineel-tree, are also frequently poisonous, and productive of violent cholera.

The cause of this deleterious quality in fish has given rise to various conjectures. Some are inclined to think there are two distinct varieties of the same fish; others impute it to copperas-banks on or near which the fish feed; and others again think that it proceeds from their particular food, which, although not hurtful to them, tinctures them nevertheless with a poison deadly to many other creatures. Of all these conclusions the last seems to be the best grounded, as it is an indisputable fact, attested in innumerable instances, that when the fish is removed off the hook, if the precaution is taken to gut it immediately and salt it, it seldom or never creates any disorder, or at most only in a very slight degree, even if of ever so poisonous a nature. Except in the sprat and cavallee, no two distinct varieties of the same fish are to be observed; and with respect to copperas-banks in the West Indies, their existence is a mere supposition, never having been satisfactorily ascertained. Even if the fact was fully established, still it is well known that this substance, or a solution of it, is inevitably fatal to all fish.

The circumstance of the alimentary tube being more poisonous than any other part of fish, is certainly a strong confirmation that its deleterious quality is owing to the food; the muscular parts

being only slightly tinctured by the chyle and blood conveyed to them, while the greater part of the poison remains in the guts. I think we may rest well assured that the poison lies in the intestinal tube, is assimilated with the food of the fish, and circulates without any detriment to it; and, moreover, that the longer the fish remains out of water, the more violent the poison becomes; but what really forms the basis of the poison has never been yet accurately ascertained. It is indeed a curious circumstance, that the same fish which is perfectly innocuous at one period, often is highly pernicious at another.

Certain and rapid death is almost sure to ensue from eating the yellow-bill sprat; but from a use of most other kinds of poisonous fish the person is seized, after a few hours, with languor, heaviness, and faintness, succeeded by great restlessness, flushings in the face, giddiness in the head, cardialgia, nausea, griping pains in the bowels, and a severe vomiting and purging. The burning which was felt at first only in the face and eyes, is at length extended over the whole body, but more particularly the palms of the hands and soles of the feet, and is often succeeded by an eruption or efflorescence, rising up in large bumps similar to bug-bites, or the nettle-rash. The pulse is usually hard and frequent at first, but it soon becomes low and feeble. With the ardor of the skin there is invariably a prickly sensation in the hands when immersed in cold water, which particular symptom may always enable us to decide with confidence on the real nature of the disease.

In some cases, the neck of the bladder, urethra, and sphincter ani, are likewise affected with ardor, and the patient experiences a difficulty of making water, together with a considerable degree of tenesmus.

Some navigators, whose crews were much affected by eating fish of a poisonous nature, have informed us, that a swelling of the salivary glands, accompanied by a profuse spitting, was a symptom which very frequently attended. In the few cases which fell under my care during my residence in the West Indies, no such symptom ever was apparent. In the advanced stage of the disease, I observed that the whole surface of the body acquired a deep yellow hue, as in jaundice, and that the urine was likewise highly tinged of the same colour. Even the perspiration gave a deep yellow tinge to the patient's linen. These appearances took place in a very high degree in one or two cases, but more particularly so in my own, as I was so unfortunate as once to experience the deleterious effects of a poisonous rock-fish.

Where a large quantity of the poison has been taken, or it has been of so deadly a nature as to prove fatal, the patient generally goes off in strong convulsions; but where the quantity and nature of the poison have not been so powerful as to occasion death, and the violence of the disorder suffers some abatement, the body becomes emaciated, the cuticle peels off in various parts, but more particularly in the palms of the hands and soles of the feet; the

hair drops, and acute shooting pains in the articulations of the wrists, knees, and ankles, and sometimes in the cylindrical bones, are felt for a considerable length of time. From the great debility which is induced, it not unfrequently happens that œdematous swellings of the lower extremities ensue.

The poison of fish is always attended with much immediate danger; and even when the person does escape its deadly consequence, his constitution not uncommonly receives so severe a shock, that in order to restore its wonted vigour, he will find it necessary to visit a cold climate. The necessity of this step I wofully experienced, and some years elapsed before the desired end was obtained.

The intentions of cure in affections of this nature are, first, to procure a discharge of the poison as quickly as possible; and, secondly, to counteract or alleviate the effects that arise from it.

The first of these intentions is to be answered by giving a smart emetic of tartarized antimony or the sulphate of zinc, together with copious draughts of diluent liquors, as advised under the head of Mineral Poisons. Where the person is of a full plethoric habit, and capable of bearing evacuation, it may also be advisable, after the operation of the vomit, to give some proper purgative, as the oleum ricini, which, as oil is found highly useful of itself in many kinds of poison, may be attended with a double effect. Where there is great irritation of the stomach without much purging, we may substitute the submuriate of mercury,* which, being made into pills, may, from the smallness of bulk, be more likely to be retained.

To answer the second intention, we must employ such remedies as have been found to possess a power of counteracting the poison in some degree. Spirituous liquors, and other strong cordials, have long been supposed to have a considerable power of obviating the deleterious effects of poisonous fish. The conclusion is, I think, well grounded, as it has been observed in most cases, that those who have taken a small quantity of rum or brandy after eating fish of this nature, have suffered considerably less than those who neglected that precaution.

Dr. Clarke of Dominica, in a letter to Dr. Simmons of London,† observes, that capsicum (Cayenne pepper) has long ago been known to possess the power of counteracting the poisonous effects of fish. If this was really a fact, we should seldom or never hear of any accident of this nature, as the negroes use a consider-

† See vol. vii. of Medical Facts and Observations, p. 289.

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1. ℞ Hydrargyri Submuriat. gr. vj.—xij.
Extract. Colocynth. C. gr. x.
Opii, gr. j.
Syrup. Simp. q. s. M.
Fiant pilulæ v. pro dos.

* 1. Take Submuriate of Mercury, six to twelve grains.
Compound Extract of Colocynth, ten grains.
Opium, one grain.
Syrup, a sufficiency. Mix them.
Let five pills be formed out of the mass for a dose.

able quantity of the fresh capsicum with every article whatever of their food. It is probable, however, that it may be employed with rectified spirit and other stimulants with some advantage.

An infusion of the sensitive plant has been mentioned as a remedy from which some benefit may be derived in cases of fish poison. I have made trial of it, but cannot report any thing in its favour.

Besides employing stimulants internally, to counteract the effects of the poison, we should attend to the symptoms which are most urgent. If the vomiting and purging continue, although proper evacuations have been premised (which frequently happens), we must then have recourse to opiates, administered by the mouth, as advised under the head of Cholera Morbus, and exhibited in clysters, along with mutton broth, or a solution of starch. Considerable doses of opium will be necessary likewise where the patient becomes convulsed, and they will require to be frequently repeated.

To allay the heat and dryness of the skin, and determine to the surface of the body, it will be proper, after the irritation of the stomach has ceased, to give small doses of the pulvis ipecac. compos., pulvis antimonialis, or pulvis Jacobi, as recommended under the head of Simple Fever, together with a free use of diluent liquors. Where any degree of strangury is present, the last will more immediately be necessary.

Under the supposition that the poisonous quality of the fish before noticed is occasioned by their feeding on the moss which grows on copperas-banks, a late writer on the subject* tells us, that in the treatment of such cases during his residence in the West Indies, his object was to decompose the poison; to effect which, he almost entirely depended on alkalies in simple solution with water. He never tried, however, the volatile alkali, although he thinks there can be little doubt of its efficacy in counteracting the poison of fish, whatever the basis of it may be.

The pains in the joints are sometimes very obstinate, and yield only to a considerable lapse of time. Covering the parts with flannel, together with the frequent use of a tepid bath, and drinking mustard-whey, or a decoction of guaiacum or mezereon, will be the most likely means to afford relief.

To obviate the debility which arises in consequence of the disease, and restore vigour to the system, the patient must enter on a course of tonics, as recommended under the head of Dyspepsia; and where these do not prove sufficiently efficacious, he should remove, without further loss of time, to a cold climate.

As fish forms a great part of the diet of the inhabitants of the West Indies, and is daily served up at most tables, it may be of some importance to be able to distinguish those of a poisonous

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* See Dr. Chisholm's Communication, No. 16 of the Edinburgh Medical Journal.

nature from such as are wholesome. The surest criterion to judge by is to give the entrails to a dog, cat, or duck; and if after an hour or two no disorder arises, the fish may be eaten with safety. Another method much practised, however, is to put a silver spoon for some time into the water in which the fish is boiling, and if upon taking out the spoon it appears unsullied, the fish is supposed to be safe; but if the colour be at all changed, it is then judged unwholesome. This test should never be depended upon.

From the observations of fishermen, it appears that fish which have no scales are most apt to prove poisonous. Those of uncommon magnitude are regarded by them as highly suspicious.

To obviate the poisonous effects of muscles, lobsters, oysters, eels, &c., a smart emetic should be administered as quickly as possible, and then the patient may take the acetous acid, and likewise milk.

Of SUSPENDED ANIMATION and RESUSCITATION.

In consequence of drowning, or a long exposure to the action of severe cold, and also of suffocation and strangulation, a considerable check is often given to the principle of life, without wholly extinguishing it. When it happens from the first of these causes, the circulation becomes gradually more feeble and slow, and much anxiety is felt about the præcordia; to relieve which the person attempts to rise to the surface of the water; he then discharges a quantity of air from the lungs, and receives into them a very small portion of water, when he again sinks. After struggling in this manner for some short time, convulsive spasms arise, the organs of respiration cease to act, and he at last expires; soon after which the skin becomes of a purple or blue cast, particularly about the face and neck, and the body sinks.

It has been supposed, and the opinion is indeed still very general among the common people, that in the act of drowning the water enters the lungs, and completely fills them. Experience, however, has shown, that unless the body lies so long in the water as to have its living principle entirely destroyed, the quantity of fluid present in the lungs is inconsiderable; for upon drowning kittens, puppies, &c. in ink, or other coloured liquors, and afterwards examining these viscera, it has been observed that very little of the coloured liquor has gained admittance to them. The circumstance may readily be accounted for, by recollecting that the muscles which form the opening into the trachea are exquisitely sensible, and contract violently upon the least irritation, as we frequently experience when any part of the food or drink happens to come in contact with them.

In those cases where a person has been long exposed to the action of cold in a severe degree, and is suffering from great numbness and a sort of intoxication, he is apt to fall quickly asleep,

and becomes quite insensible. Occasionally he comes to himself without assistance, but more frequently he falls a sacrifice.

When a person dies from suffocation, the sysmptoms are nearly the same as in apoplexy.—See Aerial Poisons.

The phenomena which attend on strangulation are, convulsive paroxysms, superadded to the apoplectic symptoms.

Livid and dark-brown spots on the face, with great rigidity and coldness of the body, a glassy appearance of the eyes, and a flaccid state of the skin, denote a perfect extinction of life: but the only certain sign is actual putrefaction; and therefore in every case where this symptom is not present, and where we are unacquainted with the length of time the body may have been under water, every possible means should be employed immediately upon its being found for restoring it to life; as the noble machine may be stopped, and the spring nevertheless still retain, in some degree, its elastic vigour.

Dissections of those who have died by drowning, show that an accumulation of blood in the venous system forms the great morbid change which takes place in accidents of this nature. The lungs are in a state of collapse, and the accumulation of blood is confined to the vena cava, the heart, and the parts of the venous system. In some cases the stomach is found to contain a small quantity of water; in others, none is to be perceived. From the muscles of the trachea having lost the principle of life, upon which the power of muscular contraction depends, they become relaxed, the water enters the wind-pipe. In all instances, the external surface of the brain appears of a highly florid colour, without any great distension of vessels, or marks of effusion. It has been supposed, however, by many, that persons who die by drowning, suffer from the intervention of apoplexy. After a recovery from apoplexy, the person is generally paralytic, whereas no such event follows the recovery from a supension of life by drowning. In both hanging and drowning, the proximate cause appears to be the stoppage of air to the lungs, which the following experiment, made some years ago by an eminent medical professor at Edinburgh, clearly confirms. A dog was suspended by the neck with a cord, an opening having been previously made in the wind-pipe, below the place where the cord was applied, so as to admit air into the lungs. In this state he was allowed to hang three qnarters of an hour, during which time the circulation and breathing went on. He was then cut down, without appearing to have suffered much from the experiment. The cord was now shifted below the opening into the wind-pipe, so as to prevent the ingress of air to the lungs; and the animal being again suspended, he was completely dead in a few minutes.

The appearances exhibited on dissection, in cases of strangulation and suffocation, are pretty similar to those in drowning, except the absence of water in the lungs and stomach: and that

in these instances there is always a greater turgescence in the vessels of the pia mater.

The following are the means to be employed for the recovery of persons recently drowned.

As soon as the body is taken out of the water, it is to be speedily conveyed in men's arms, or placed upon a door, or in a cart upon straw, if the distance is considerable, to the nearest house, where it is quickly to be stripped of the wet clothes; to be wiped perfectly dry: and then to be laid between warm blankets, spread upon a mattress, or a low table, and on the right side in preference to the left, in order that the passage of the blood from the heart may be favoured by the position. The head is at the same time to be covered with a woollen cap, being properly elevated with pillows, and bags filled with warm sand, or bricks heated and wrapped in flannel, are to be applied to the feet. The doors and windows of the apartment are to be thrown open, in order that the cool air may be freely admitted, and no persons but such as are necessary to give due assistance, should be allowed to enter it.

Having taken these steps, we should next endeavour to expand the lungs, and make them, if possible, reassume their office. When not furnished with a flexible tube made of elastic gum, and of a sufficient length, or with the bellows invented by Mr. Hunter for this express purpose, (which is of such a construction that by one action fresh air is thrown into the lungs, and by another it is thrown out again, so as to imitate or produce artificial breathing,) we must be content with blowing in air by means of a common pair, or by inserting a pipe into one nostril, compressing the other, shutting the person's mouth at the same time, and then blowing through the pipe with a considerable degree of force. By any of these means we may be able to inflate the lungs.

At the same time that the lungs are inflated, we should rub every part of the body with warm flannel cloths. On all occasions it will be the best way to divide the assistants into two sets; the one being employed in endeavouring to restore the heat of the body; the other, in instituting an artificial breathing in the manner just pointed out. Should the frictions not be attended with any effect, we ought to apply flannel cloths, wrung out in very hot water, over the heart and thorax, or we may put the person into a warm bath. A high degree of heat will not be necessary; a moderate degree will be sufficient. If the weather be under the freezing point, and the body, when stripped, feel cold, and nearly in the same condition with one that is frozen, it will be necessary at first to rub it well with snow, or wash it with cold water; the sudden application of heat in such cases having been found very pernicious. In a short time, however, warmth must be gradually applied.

To assist in rousing the vital principle, it has been customary to apply various stimulating matters, such as common salt, and rectified and also volatile spirits, to different parts of the body;

but as the skin loses its sensibility in proportion as it is deprived of heat, and does not recover it again until the natural degree of warmth be restored, it is obvious that previous to the restoration of heat all such applications are useless. Rectified spirits evaporate fast, and thereby, instead of increasing warmth, as they are expected to do, carry off a part of the heat from the body. Volatile spirits are liable to the same objections, and are besides distressing to the eyes of the assistants. Common salt quickly frets the skin, and has, in some cases, produced sores which were difficult to heal after recovery. When there is reason to think the skin has in some degree recovered its sensibility, the wrists, ankles, temples, and parts over the stomach and heart, may be rubbed with a little of the linimentum ammoniæ subcarbonatis, which will evaporate but slowly, and produce no cold in being rubbed in. In cases of suspended animation, it has likewise been usual to stimulate the stomach and intestines; the former by means of some moderately warm liquor, such as negus highly spiced, introduced into the organ through a flexible tube, and the latter by means of injections.

Some time ago it was the practice to employ the smoke of tobacco; but this, instead of answering our wishes, would prove injurious, by further depressing the vital principle. Instead of it, we may recommend a clyster, consisting of a pint or more of water, moderately warmed, to which may be added a little volatile spirit, essence of peppermint, or rectified spirit.

Electricity is sometimes had recourse to, in order to promote a restoration of life: unless employed by insulation alone, it will however be more likely to do harm than good. The body may be completely insulated, by placing it on a door, supported by a number of quart bottles, whose sides are previously wiped with a dry towel, to remove any moisture they may have contracted. Moderate shocks are found to answer best, and these may, at intervals, be passed through the chest in different directions. They may likewise be sent through the limbs, and along the spine; but it is doubtful how far it is safe to pass them through the brain, as many have recommended.

From some late experiments made by Professor Aldini, of the University of Bologna, on the body of a malefactor who was executed for murder in London, it would appear that galvanism, as an auxiliary, promises great advantages to the interests of humanity, in cases of apparent death by drowning, and others of asphyxia. Before dissection, the corpse was made to exhibit very powerful muscular contractions, and these continued for upwards of seven hours. On the first application of galvanism to the face, the jaw of the deceased criminal began to quiver, and the adjoining muscles were horribly contorted, and one eye was actually opened. In the subsequent part of the process, the right hand was raised and clenched, and the legs and thighs were set in motion. We are further told, that it appeared to the uninformed

part of the by standers, as if the wretched man was about to be restored to life.

The mode recommended by M. Aldini for the employment of galvanism, as a means of restoring suspended animation, is as follows. He immerses the hand in a solution of muriate of soda, and establishes an arc, one of the extremities of which is made to pass round the fore-arm, while the other is brought in contact with the bottom of the pile. He adapts to the extremity of another arc an elastic probe, which is applied to one of the ears, moistened by means of a syringe with the same solution, and connects the other extremity of the arc with the summit of the pile.

Bleeding is a remedy which is sometimes employed in cases of a suspension of the vital powers from drowning. Where stupor, headach, &c. remain after the person has come to himself, it certainly will be advisable to draw off some blood, and possibly the best way of doing it will be by the application of leeches to the temples; but where these symptoms do not prevail, or before the natural heat is restored to the body, bleeding in any manner will be more likely to do harm than good, by hazarding the entire destruction of those feeble powers which yet remain, to increase and support which our best endeavours should be directed.

Hanging the patient by the heels, as is sometimes adopted by the ignorant, in cases of suspended animation from drowning, under the mistaken principle that this is induced by the water taken into the stomach and lungs, or both, is a most dangerous practice, calculated only to extinguish the spark of life, if any remained, and consequently to exclude every hope of recovery.

The means which have been advised are diligently to be persevered in for a considerable time, and the case by no means to be given up as irretrievably lost, until at least after the expiration of four or five hours' trial; as recoveries have been effected to this extent.

When the patient is so far recovered as to be able to swallow, he should be put into a warm bed, with his head and shoulders properly elevated with pillows. Warm wine whey, or any other light and nourishing drink, should now be given in moderate quantities at a time, and a gentle diaphoresis promoted by wrapping the feet and legs in flannels well wrung out of hot water. If the stomach and bowels feel distended and uneasy, a clyster composed of a pint of warm water, with about an ounce of purgative salt dissolved in it, and a little oil, may be administered. The general practice in this case is, to give an emetic; but, from the powers of the machine being still very weak, the agitation of vomiting would appear somewhat hazardous. The patient should on no account be left alone until the senses are perfectly restored, and he is able to assist himself; some persons having relapsed and been lost, from the want of proper attention to them, after the vital functions were, to all appearance, tolerably established.

In cases where life is suspended by hanging, the same means

recommended for drowned persons are to be pursued, with the addition of opening the jugular veins, or applying cupping glasses to the neck, which will tend considerably to facilitate the restoration of life, by lessening the quantity of blood contained in the vessels of the head, and thereby taking off the pressure from the brain. Except in persons of a full plethoric habit, the quantity drawn off need seldom exceed an ordinary tea-cupful, which will in general be sufficient to unload the vessels of the head, without weakening the powers of life.

The method of treatment to be adopted in cases of general torpor from an exposure to a severe degree of cold should be as follows:

The person should be removed with all speed to a convenient place where the necessary aid can be given. If the body is naked, it should be covered, leaving the head and face bare. If snow can be got, the body may be rubbed at first with it gently from the stomach to the extremities. In a few minutes afterwards the frictions may be made with cloths steeped in cold water, the temperature of which is to be increased, so as to heat the body gradually, and by slow degrees. The face may at the same time be sprinkled with water, the lips and nostrils be irritated with a feather and volatile alkali, or some such stimulant. As soon as the body is restored to some degree of warmth, and the limbs become somewhat flexible, the person should be placed in a dry, but not warmed bed, and be well rubbed with flannels or a brush: his lungs may also be inflated, and an irritating clyster (composed of a pint of water, with an addition of a spoonful of spirit of hartshorn with a little mustard, or a little rum, brandy, or gin, added instead of these,) be administered from time to time.

When the power of swallowing is restored, we should give the person some warm and gently stimulating drink, such as thin broth with a little brandy in it, or water with some wine, which may be administered by a spoonful at a time.

While the body is cold, and the circulation and respiration are languid, I think blood letting would be improper. If, however, after these functions and the natural temperature are restored, the patient should remain any time in a comatose state, with a strong full pulse, the propriety and necessity of venesection can hardly be doubted.

Before I close this subject, I think it proper to observe, that in all cases of drowning, as well as in every other instance where death appears to be the consequence of apoplexy, syncope, lethargy, hysteria, or asphyxia, &c. we should be cautious in not allowing the body to be interred until evident signs of decomposition or putrefaction are apparent; as the suspension of respiration, rigidity of the limbs, abolition of sensation and motion, the want of pulsation in the heart and arteries, coldness of the body, and the collapse, opacity, and want of lustre in the eyes, are but equivocal symptoms of death, and ought not therefore to be relied on alone.

FROST-BITTEN.

If a person has exposed his hands and feet to a very severe cold, the excitability of these parts will be so much accumulated, that if they are brought suddenly near a fire, a violent inflammation and even a mortification may take place, which has, indeed, often happened; or, at any rate, that inflammation called chilblain will be produced, from the violent action of the heat upon those parts; but if a person so circumstanced were to put his hands and feet into cold water, very little warmer than the atmosphere to which he had been exposed, or rub them with snow, which is not often colder than 33 degrees, the morbid excitability will gradually be exhausted, and no bad consequences will ensue. When the hands, feet, nose, or any other part of the body, have therefore been exposed to violent cold, so as to be frost-bitten, they ought at first either to be well rubbed with snow, or be put into cold water, and afterwards be subjected to warmth in the most gentle and gradual manner.

THE DISEASES OF PREGNANCY.

Three different stages evidently exist during a state of pregnancy, each of which has a distinct set of symptoms; and when we reflect on the alteration which the constitution suffers in consequence of impregnation, and the vast distension and dislodgment of the uterus which prevail at a more advanced period, we cannot be surprised at the many complaints and irregularities which then arise.

The first stage of pregnancy is usually accompanied with a suppression of the menses, together with frequent nausea and vomiting, heart-burn, indigestion, peculiar longings, headach, giddiness, toothach, and sometimes a slight cough; the breasts become enlarged, shooting pains extend through them, and the circle round the nipple alters to a dark brown colour. There often occurs likewise a feverish disposition, with debility, emaciation, irritability, and peevishness of temper, and a total alteration of the countenance, every feature of which becomes much sharpened. Some women breed so easily as to experience hardly any kind of inconvenience whatever: whilst others again are perfectly incapable of retaining the least thing on their stomach, and are thereby reduced to a state of extreme weakness.

With some women the vomiting will continue during the whole or greater part of the second stage of pregnancy, as well as the first; but this does not usually happen. Partial suppressions of urine with a frequent inclination to void it; itching about the external parts of generation, costiveness, tenesmus, and the piles, are what they are chiefly incommoded by during this period. Most women quicken about the sixteenth week after conception, at

which time the mother becomes sensible of the slightest efforts of the child; and besides the complaints just enumerated, she will then be liable to sudden faintings, and slight hysteric affections.

According to the common received opinion, quickening, so termed, has been generally understood to commence at the time when particular sensations are perceived by the mother, supposed to be occasioned by the first motion of the child. The most usual time of feeling any such symptoms is about the latter end of the fourth or beginning of the fifth month of pregnancy: at this period the uterus filling up the pelvis, slips out and rises above the rim; and from that sudden transition, women of a delicate constitution, and irritable fibre, are apt to faint, more particularly so if in an erect position.*

During the last three months, or third stage of pregnancy, general uneasiness, restlessness, (particularly by night), costiveness, œdematous swellings of the feet, ankles and private parts, cramps in the legs and thighs, difficulty of retaining the urine for any length of time, varicose swellings of the veins of the belly and lower extremities, and the piles, are the affections which usually prove most troublesome. In weak delicate women, of an irritable habit, convulsive fits sometimes arise, which are ever to be regarded in a dangerous light.

Nausea and vomiting.—It has been observed, that frequent nausea and vomiting are apt to prove somewhat troublesome to pregnant women, and in many cases to reduce them to a state of very great debility. As these most frequently arise immediately upon first getting out of bed in the morning, the patient should be recommended, under such circumstances, never to rise until she has taken either a dish of tea, coffee, or whatever else she has usually accustomed herself to for breakfast.

If the vomiting should become at any time so severe as to threaten the bringing on a miscarriage from the violence of straining, it may then be advisable to direct two or three table-spoonsful of the saline medicine to be taken every now and then in such a manner as that the effervescence shall ensue after it is swallowed; besides which, the patient's body should be kept open with some gentle laxative. If these means do not succeed, we may order about six ounces of blood to be drawn from the arm, and which, if necessary, may be repeated in a week's time. The sickness in such cases depends on irritation, and is only to be removed with certainty by bleeding.

Local applications have been recommended to abate excessive vomiting. As such, a piece of folded linen cloth, moistened with tinctura opii, may be kept constantly applied to the region of the stomach. Probably a small addition of æther might increase its

* See Obstetric Studies, by Mr. James Hogben.

good effect. It sometimes happens that vomiting is incessant for many days together, accompanied with great prostration of strength and constant thirst, and at the same time an utter impossibility of retaining any thing on the stomach. In this state the application of leeches to the pit of it, and a constant attention to suffer nothing to be swallowed that can irritate, allowing the patient only asses' milk, and that by single spoonsful, have been found to afford relief. If a considerable degree of nausea prevails, without the ability of throwing up, fourteen or fifteen grains of pulv. ipecac. may then be given, experience having proved that gentle emetics may be administered with perfect safety to pregnant women.

Headach, with plethora.—When either headach, drowsiness, or a sense of fulness in the vessels, proves troublesome, drawing off a few ounces of blood from the arm in robust women will most likely be attended with advantage. In those of a weak, irritable habit, the application of a leech or two to each temple will be more advisable than bleeding from the system, where the headach proves obstinate and resists the other means we have employed. The bowels are at the same time to be kept in a proper state by some gentle aperient.

Toothach.—For the alleviation of the toothach, the external as well as internal application of a few drops of the oil of cloves, cajeput, juniper, or any other essential oil, will often prove effectual.

Heartburn.—If the patient is incommoded by heartburn (which usually proceeds from an acidity in the stomach), half a drachm of magnesia may be taken morning and evening to obviate it: and if this fail, we may then have recourse to the absorbent mixture advised below*, which Dr. Sims informs us† he has found the most efficacious of all remedies for the removal of this distressing symptom in pregnant women.

Longings.—When peculiar longings arise in a state of pregnancy, they should always be gratified, if possible, as women are apt to miscarry from the anxiety these occasion when not indulged in them: but that the child in utero can be marked by any depraved appetite of the mother, or be mutilated by any disagreeable object being presented to her, cannot be admitted. All aberrations from the usual form ought to be ascribed to the irregular

† See the Medical and Physical Journal, No. viii. p. 206.

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* 1. ℞ Magnesiæ. ℥j. Aq. Puræ, f. ℥vss.	* 1. Take Magnesia, one drachm. Pure Water, five ounces and a half.
Spirit. Cinnam. f. ℥iij.	Spirit of Cinnamon, three drachms.
Liquor. Ammon. Subc. f. ℥j.	Solution of Subcarbonate of Ammonia, one drachm.
ft. Mistura, cujus sumat cochl. larg. ij. vel. iij. pro re nata.	Mix them, and take two or three tablespoonsful for a dose, as the occasion may require.

operation of the powers concerned in generation, and are not produced by the imagination of the mother.

Hysteria.—Should any hysterical affection or sudden fainting arise, little more will be necessary than to expose the patient to a free open air, to place her in a horizontal position ; and to give her a glass of cold water with a few drops of the liquor ammoniæ subcarbonatis, or a little wine sufficiently diluted.

Costiveness, Piles, &c.—Costiveness, partial suppressions of urine, and the piles, which attend on the second stage of pregnancy, are occasioned by the great pressure of the uterus on the rectum and bladder. The first and last of these symptoms are to be obviated by a daily use of some gentle laxative, such as a solution of manna, or the electuary advised below.* Pills composed principally of aloes (such as Anderson's,) are too generally used by pregnant women for this purpose : but they are highly improper, as being of too stimulating a nature, and very apt to occasion hæmorrhages and the piles. In troublesome piles, which are externally seated, the best application is leeches, and the irritation may afterwards be lessened by preparations of the plumbi superacetas. Ten grains of this, dissolved in four ounces of rose water, form a good lotion, with which the parts may be washed frequently. If necessary, a little of the vinous tincture of opium may be added.

Diarrhœa.—If diarrhœa arises in pregnant women, it should be treated just as at any other time (see this disease ;) and after the stomach and intestines are cleared, astringents may be used, if there is no great degree of fever. If fever is present, that must be attended to chiefly, and be first removed.

Suppression of Urine.—When a suppression of urine takes place, which is apt to happen in the advanced stage of pregnancy, besides making use of emollient fomentations, clysters, and gentle purgative medicines, such as the oleum ricini, the patient drinking plentifully at the same time of diluent liquors, it will be necessary to have recourse to chirurgical assistance by drawing it off by means of a catheter morning and evening.

Retroverted Uterus.—It sometimes happens that a retroversion of the uterus ensues, in which case it becomes misplaced downwards and backwards, because the os uteri is tied forwards to the meatus urinarius, and there is no communication behind by which it is held to the rectum ; but anteriorly it is connected with the neck of the bladder by close cellular substance ; therefore what-

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* 2. ℞ Confect. Sennæ, ℥ij.
Potassæ Supertart. ℥ij.
Pulv. Jalapæ, ℥ss.
Syrup. Rosæ, q. s. M.
ft. Electuarium, cujus sumat ægra molem nucis moschatæ horâ somni, vel pro re nata.

* 2. Take Confection of Senna, two ounces.
Supertartrate of Potass, two drachms.
Powder of Jalap, half a drachm.
Syrup of Roses, a sufficiency.
Mix them, and of this electuary the patient may take the bulk of a nutmeg at bed-time, or occasionally.

ever raises the bladder will raise the cervix uteri, and what raises this must at the same time depress the fundus: so that in a retroversion of the uterus, the urethra is drawn up close behind the symphysis pubis; and in the case now under consideration, the bladder rises and draws up the os uteri with it.

The only period of pregnancy at which a retroversion of the uterus is apt to arise is between the end of the third and fourth months; for in the early months of pregnancy the uterus in length from the fundus to the cervix is not so great as to fill the space between the sacrum and the neck of the bladder, and cannot for that reason produce suppression. This applies to all situations of the uterus in unimpregnated women, and women who are with child, till the close of the fourth month of pregnancy; after which, the uterus cannot be made to go down into the pelvis. When the uterus has once fairly ascended into the abdomen, it is impossible for it to return into the pelvis until its volume has been diminished by delivery or abortion.

In most of these cases the suppression of urine is the only material object to be attended to; for the uterus being retroverted, the woman cannot make water; therefore it must be drawn off by the catheter. If necessary, this operation is to be repeated twice a day till the uterus, by a gradual enlargement, recovers its natural situation, which will be preferable to any interference of the attendant to reduce it. Where it is impossible for him to attend twice a day for the purpose of drawing off the water, the reduction may possibly be effected by the patient placing herself on her hands and knees, and then passing two fingers of one hand into the vagina, and a finger of the other into the rectum, by which means it is possible sometimes to succeed. Where the event is left to time, the uterus is sure to recover its proper situation; for which reason it is preferable to leave it.

In passing the catheter in cases of retroverted uterus, it will be necessary to attend to its curve, which curve is given by holding the instrument in one hand, and pressing the thumb on the other hand on one side, while it is gently drawn through the hand. The point of the catheter must be dexterously introduced close behind the pubes; for if some dexterity is not used it frequently will not pass into the bladder.

Troublesome Itchings.—Where a severe itching about the parts of generation attends on pregnancy, it will be proper to keep the woman's body perfectly open with some cooling laxative, and to wash the parts three or four times a day with a solution of lead, such as the liquor plumbi acetatis dilutus; if much inflammation accompanies the itching, topical bleeding may be requisite.

Œdematous Swellings.—The swellings of the feet, ankles, and private parts, which arise in the last stage of pregnancy, are occasioned by the pressure made by the womb, which now prevents the free return of the blood from the lower extremities. Gravid women are usually free from these complaints in the morning, but

towards night they frequently suffer much from them. Slight scarifications with the edge of a lancet, to discharge the stagnated fluid, with the after application of flannels wrung out in a warm infusion of emollient herbs, have been employed in cases of great distension. In general, however, it will only be necessary that the patient does not keep her feet in a pendant position for any length of time.

Cramp.—Cramps of the legs and thighs are to be relieved by rubbing the parts with cold vinegar, with camphor dissolved in oil, or the liniments here* advised, the person wearing stockings in bed. At an advanced period of pregnancy they are only to be relieved by labour removing the cause. Where the stomach is affected with spasms, proper doses of æther and tincture of opium, with the other means advised under the head of Hysteria, in cramps of that organ, will afford the greatest benefit. In such cases the patient must carefully avoid every kind of food that is apt to prove flatulent or hard of digestion, and she must keep her body perfectly open.

Inability of Sleeping and Restlessness.—Inquietude and inability to sleep prove troublesome complaints towards the latter period of pregnancy; the patient being obliged to rise frequently throughout the course of the night, in order to expose herself to the influence of cool air. Nothing affords so great relief in cases of this nature as bleeding in small quantities, with the occasional use of some cooling laxative medicine. Opiates are never attended with advantage in such conditions.

Varicose Veins.—The veins of the legs, thighs, and belly often become varicose in the last stage of pregnancy, and sometimes put on an alarming appearance from their great enlargement and distension. No bad consequences have, however, been observed to attend such a condition; and the only thing necessary to be done, is to empty the vascular system by moderate bleeding, gentle purging, and a spare diet. Should the vein of any particular part become so distended as to prove troublesome, it may be advisable to apply a bandage of a moderate tightness, so as to give the necessary support to it.

Jaundice.—In some instances the woman is affected with a pain in her side, and excessive sickness at the stomach and retchings, the skin assuming a deep yellow colour. It is only under these circumstances that the complaint proves distressing, and it is usually occasioned by the formation of one or more gall-stones, and the obstruction which they oppose to the usual and regular passage of the bile. The means most conducive to relieve the woman from

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* 3. ℞ Spirit. Camphoræ, f. ℥j.
——— Æther. Sulph.
Tinct. Opii, āā f. ℥ss. M.
ft. Linimentum.

* 3. Take Camphorated Spirit, one ounce.
Spirit of Sulphuric Æther,
Tincture of Opium, of each half an ounce.
Mix them for a liniment.

this degree of the complaint are blood-letting, warm fomentations to the painful part, and large doses of opium, with such laxatives as shall counteract the effects of the opiates.

Jaundice, or any other bilious affection prevailing during a state of pregnancy from the pressure of the uterus on the gall-bladder or ducts, is to be obviated by keeping the body open with some gentle laxative, such as pills composed of rhubarb and soap.

Incontinency of Urine.—This is a very disagreeable complaint, as it keeps the woman constantly in an uncomfortable state. It is to be removed only by delivery, but may be moderated by a frequent horizontal posture. Its bad effects may be prevented by a scrupulous attention to cleanliness, and the use of a thick compress of linen, or a sponge of considerable size, properly fastened.

Over-distension of the Abdominal Skin.—In the latter months of pregnancy the integuments of the abdomen will sometimes become cracked and sore, the skin seeming to suffer from over-distension. In this case nothing is so effectual as a frequent use of warm oil by friction, and to give it somewhat of a medicated appearance a little camphor may be added.

False Pains.—Pains somewhat resembling those of labour, and known by the name of false pains, are apt to come on at an advanced stage of pregnancy, and often to occasion an unnecessary alarm. In such cases confinement in an horizontal position, bleeding if plethoric, laxative medicines if costive, and administering small and frequent doses of some opiate until the patient finds ease, will be necessary.

CONVULSIONS.

Convulsions may occur either during pregnancy or labour, and are of different kinds, requiring opposite treatment. One species is the consequence of great exhaustion from a tedious labour, excessive fatigue, or profuse hæmorrhage. This makes its attack without much warning, and generally alternates with deliquium, or great feeling of depression of strength and debility; the muscles about the face and chest are chiefly affected, and the pulse is small, frequent, and compressible, the face pale, the eyes sunk, the extremities cold. The fits succeed each other pretty quickly, and very soon terminate in a fatal syncope. Apparently it was this species of convulsion that destroyed her Royal Highness the Princess Charlotte of Wales.

In all cases of this nature, it should be our object to check the further operation of the exciting cause, by restraining hæmorrhage if present, or preventing every kind of exertion, and thus husband the strength which remains, or recruit it by cordials. Opiates will be of infinite service in conjunction with æther and camphor. Delivery is usually necessary.

Hysterical convulsions are more common during gestation than during labour. Here it may therefore only be necessary to add to what has already been said under the head of Hysteria, that if they do not speedily yield to antispasmodics, venesection had better be resorted to; and if that fails, we should, if possible, deliver the woman.

The species of puerperal convulsions most generally met with bears some likeness to epileptic fits; and it is only by being aware of the different degree of violence attending each, that at first sight we can distinguish them. A fit of puerperal convulsion is much more severe than one of epilepsy, and a paroxysm of the former is usually so violent, that a woman, who when in health was by no means strong, has been so convulsed as to shake the whole room, and to resist the coercive powers of many attendants. No force indeed can restrain a woman when in these convulsions. The distortion of her countenance is beyond conception; in regard to deformity of countenance, nothing bears any resemblance to the progress of this disease; the rapidity with which the eyes open and shut, and the sudden twirlings of the mouth, are inconceivable and frightful.

Puerperal convulsions seldom happen before the sixth month, but may occur at any time between this period and the completion of labour. They may arise as the first symptom of labour, or after the labour is finished. This species of convulsion depends on the state of the uterus, and has been observed to arise oftener during the first pregnancy than in any after one, particularly where the woman is unmarried.

The characteristics of puerperal convulsion are as follow:—The paroxysms occur periodically like labour pains, so that there is a considerable space between them at first, but afterwards they become more frequent. They not only occur with the labour pains, but in the intervals between; and whether there have been labour pains or not before they come on, we shall usually find the os uteri somewhat dilated, and it is sure to become still more so from the continuance of these convulsions. At length, if the woman is not relieved, and the convulsions continue without destroying life, the child is actually expelled by the contraction of the uterus, which power is capable of expelling it even after death.

The immediate symptoms are somewhat similar to those of the epileptic paroxysm. The woman suddenly loses all sensation, and stretches herself out; the muscles then become extremely rigid, and are speedily afterwards thrown into violent convulsions, the face is distorted, the eyes are protruded, she gnashes her teeth, and foams at the mouth. After the paroxysm is over, she remains in a comatose state, and has stertorous breathing, similar to what takes place in apoplexy. At length, except in very aggravated cases, she slowly comes to herself, but without being conscious that she has been in a fit. After a longer or shorter interval a fresh attack takes place in the manner just described, for it rarely happens that there is not a repetition of the paroxysm in all cases of true puer

peral convulsion. During the fit the skin becomes dark and purple, proving that the circulation through the lungs is not free, which purple colour leaves the woman after the fit is over. By the introduction of the hand into the uterus when these convulsions have come on, it has been ascertained that this organ is contracted, but with a tremulous undetermined sort of force, perfectly different from what takes place at any other time.

There are two cases of puerperal convulsion which are very distinct: one is a convulsion dependent on an irritable or excitable state of the nervous system; the other on a fulness of the vessels of the brain, or perhaps a slight extravasation from the vessels thereof. When puerperal convulsion arises from the latter cause, it is always preceded by some symptoms, which, if watched will enable us to relieve, if the patient applies in time, but which is rarely done; and if these symptoms are neglected, at some period or another convulsions will follow. In a woman strongly disposed to this complaint from such a cause there will be a sense of great fulness in the head, giddiness in the advanced periods of pregnancy, drowsiness, and a sensation of weight when she stoops forward, imperfect vision, and atoms floating before the eyes. These symptoms strongly denote fulness of the vessels of the head, and if allowed to continue, may lead to extravasation or puerperal convulsion; but if early attended to may be removed, and premature labour prevented. Under such circumstances the first step to be dopted is, to draw ten or twelve ounces of blood from the arm, repeating the operation the next day or so, if no alleviation takes place. After the first bleeding, the bowels should be opened by some mild purgative, such as a solution of any of the neutral salts and manna, which may be repeated every third or fourth morning until the plethora is removed. With these means the patient ought to abstain from all solid food, wine, &c.

When these precautionary means have not been adopted, and puerperal convulsions have ensued, we are, on being called in, to open a vein immediately, particularly the jugular, or even the temporal artery, and to draw off blood in a considerable quantity, being regulated therein by the appearance of the person and her habit of body. From twelve to twenty ounces may be the extent of the first bleeding. If the disease goes on, and the os uteri does not admit of delivery from its not being dilated, the convulsions not abated or gone off, and the pulse in such a state as to admit of it, we should bleed again and again. Sixty ounces of blood have been drawn off in the course of the twenty-four hours under these circumstances, and with a happy effect. Women in such a state admit of divided bleedings very largely. On examining the bodies of women who have died of puerperal convulsions, the vessels of the brain are always found enormously turgid; in some cases blood is extravasated, and the heart is often perceived completely empty.*

* See Cases reported by Mr. Chevalier, in the Medico-Chirurgical Transactions.

After the first bleeding, a blister of considerable size should be applied to the neck, or between the shoulders; the head be shaved and cooled with evaporating lotions; and, if judged necessary blood be drawn from the temples by several leeches. The next point to be attended to is to get the bowels to act as quickly as possible, and this will be effected by throwing up a smart or active clyster, and then giving a strong solution of some neutral salt, as magnesiæ sulphas, potassæ tartras, or soda tartarizata, in an infusion of senna, as soon as the patient becomes capable of swallowing. The bladder is also to be emptied by a catheter if necessary.

If it is a case of convulsion depending upon irritation, we may likewise bleed; but we must proportion the quantity accordingly. Eight or ten ounces of blood will be sufficient, and where more may appear necessary, it will be best to draw the remainder by applying leeches to the temples. In cases dependent on irritation, opium will be very proper, and it ought to be given to the highest possible extent, the form of a clyster being that to which we ought to give a preference. We are at the same time not to neglect the bowels, which should be kept perfectly open. Dr. Denman proposes that a clyster containing six grains of opium should be administered, under the supposition, that by putting a stop to the contractions of the uterus, the convulsive contractions in other parts of the body may also cease. From the tendency of opium to affect the brain, some practitioners have strongly objected to its use in puerperal convulsions. By throwing it into the intestines, it will not, however, be so likely to affect the sensorium as when received into the stomach.

Some physicians recommend the use of a warm bath, while others again disapprove of it. The pediluvium, or the application to the soles of the feet of bottles filled with warm water, may at any rate be proper.

The warm bath is strongly recommended by Dr. Denman among the means for preventing convulsions in women previous to, or during their confinement. He states, that from its occasional use women will often find much benefit, and that it is one of the principal means which professional assistance is capable of affording for preventing puerperal convulsions, and for insuring an undisturbed labour. He also recommends a warm bath in labours rendered complex by convulsions, and this, upon a long and extensive experience. He says, that when convulsions have continued or increased, notwithstanding copious bleeding and the use of all other rational means, the patient may be put into the warm bath, in which she may remain a considerable time if the convulsions are suspended while she is in it. In instances where a warm bath could not be procured, or while it was preparing, he has directed flannels wrung out of hot water to be applied over the whole of the abdomen.

Dr. Denman* mentions, that he has seen the patient relieved

* See his Introduction to the Practice of Midwifery.

from that state of irritation immediately preceding the convulsion by dipping feathers in cold water, and dashing it with force over the woman's face, as this roused her, and interrupted the progress of the fit. Where the further application of cold may be deemed necessary, and appear advisable, we may throw water over the patient's head, bringing this over the side of the bed, and holding an empty pail underneath to receive it. It should be done on the approach of the fit, which may be ascertained by attending to the vibrations of the intercostal muscles.

In all cases of puerperal convulsion, after having paid due attention to the lessening of the cause which has given rise to it, we should uniformly exert our best endeavours to deliver the woman as expeditiously as possible where it is practicable without violence. When we find that the os uteri begins to relax and open, and which may take place although there be no labour pains, we must introduce the hand slowly, dilate it, and deliver the child.

If convulsions take place after the delivery of the child for the first time, then the placenta, if it have not come away, ought immediately to be extracted; and, if the pulse does not expressly forbid it, a vein is to be opened, and afterwards the bowels purged.

Where convulsions continue after the uterus is emptied of its contents, all that we can do is to keep the brain unloaded, the bowels open, and the irritability of the system counteracted by opium, joined with other antispasmodics, such as musk, camphor, and æther. Where the disorder continues many hours, we may apply a large blister to the head, and if benefit is not obtained by the next day, one may also be applied to the inside of each leg. These, by exciting an irritation upon a part distant from the seat of the disease, may tend to diminish the diseased action, and thereby afford some relief.

To prevent puerperal convulsions from supervening, as they are in every instance to be considered as highly dangerous, particularly at an advanced stage of pregnancy, it will be prudent, in robust and plethoric habits, to pay an early attention to a use of the lancet during the progress of pregnancy, by drawing off a sufficient quantity of blood at different periods; taking care, at the same time, and particularly near the termination of pregnancy, to keep the body open by cooling purgatives. In women of an irritable constitution, all exciting causes should be carefully avoided, and the habit be strengthened as much as possible, and thereby be rendered less susceptible of disagreeable or ready impressions.

ABORTIONS.

By abortion is to be understood the expulsion of the contents of the gravid uterus at a period of gestation so early as to render it impossible for the fœtus to live. It is an accident or disease of frequent occurrence, which is always attended with disagreeable circumstances; and which, although it seldom proves immedi-

ately fatal, may still be productive of much mischief at a future period.

Abortions may happen at any period of pregnancy, but they take place most frequently about the third or fourth month.

From the end of the third month to the period of quickening there is a greater susceptibility in the uterus to have its action interrupted than either before or afterwards, which is the reason of more miscarriages happening at that time than at any other, and points out the necessity of redoubling our vigilance in watching and guarding against the operation of any of the causes from the tenth to the sixteenth week that may be likely to excite abortion.

When a woman happens to part with her burden before the seventh month, she is said to have miscarried or aborted: but when delivered of it after this time, the term labour is usually applied.

Children born at the end of the seventh month are seldom reared; and when they are, they usually prove small and weakly; but those of eight months are frequently preserved by bestowing proper care on them.

In consequence of an imperfect conception, it sometimes happens, that moles or substances of a fleshy nature (which upon being cut open contain not the smallest vestige of a child,) are formed in the uterus; and these at length becoming detached, give rise to a considerable degree of hæmorrhage.

As some women menstruate during the first months of pregnancy, it will be necessary to distinguish between an approaching miscarriage and a visitation of the menses, which may readily be done by inquiring whether or not the hæmorrhage has proceeded from any evident cause, and whether it flows gently or is accompanied with unusual pains. The former generally arises from some fright, surprise, or accident, and does not flow gently and regularly, but bursts out of a sudden, and again stops all at once, and is also attended with severe pains in the back and bottom of the belly; whereas the latter is marked with no such occurrences.

Voluptuous women who are of a plethoric habit, as well as those who are of a weak and irritable frame, are most apt to miscarry; but accidents of this nature sometimes occur from a general defective constitution, or from a malconformation of the sexual organs.

The causes which give rise to floodings during a state of pregnancy are, violent exertions of strength, lifting some heavy weight, severe exercise, as dancing or much walking, the fatiguing dissipations of fashionable life, sudden surprises and frights, violent fits of passion, great uneasiness of mind, uncommon longings, overfulness of blood, partial spasmodic action about the os uteri, aloëtic purges, profuse evacuations, excessive venery, former miscarriages, weakness in the parts immediately concerned, a diseased state of the uterus, general debility of the system, external injuries, as blows and bruises, strong acrid medicines, such as savin and helle-

bore, which are often taken for the express purpose of exciting abortion and the death of the child.

A pregnant woman may be attacked with a flow of blood from the womb in consequence of any cause which is capable of separating a part of the ovum from the corresponding part of the uterus. The vessels which before passed straight from its internal surface into the membranes or placenta, and connected them together, now open, so as to allow the blood to escape between them, and to flow externally. This separation and consequent rupture may arise from any of the various causes just recited, but in a few instances it is occasioned by an implantation of a part of the placenta immediately over the os uteri, which cause is by far the most important, because it is the most dangerous, and the least likely to find a spontaneous remedy.

Abortions are sometimes induced by what is termed a retroversion of the uterus, in which the fundus uteri is retroverted and pressed down between the rectum and the vagina. This rarely occurs, however, beyond the first or second month of gestation, and is generally preceded by a difficulty in making water, and a consequent tumour of the bladder; a violent pain about the perinæum is thus caused, and a miscarriage is liable to follow.

Abortions are often preceded by a general sense of coldness, flaccidity of the breasts, slight pains in the loins and lower region of the belly, and sometimes with a slight febrile state of the system. In plethoric habits, and where abortion proceeds from over-action or hæmorrhagic action of the uterine vessels, the fever is idiopathic, and precedes the hæmorrhage. After a short continuance of these symptoms, a slight discharge of blood ensues, coming away sometimes in clots, and at others gushing out in a florid stream, then stopping perhaps for a short time, and again returning violently.

Sometimes nothing but coagulum can be perceived, that is so firm, and the globules and lymph so disposed as to make it assume, more especially if it has been retained for any time about the uterus or vagina, a streaked or fibrous appearance, which often gives rise to a supposition that it is an organized substance. When the contents of the uterus are expelled, a bloody discharge continues for a few hours, and is then succeeded by a serous fluid.

When the pregnancy is advanced beyond the third month, and abortion is likely to ensue, we have much bearing down, together with a derangement of the stomach, causing sickness and faintness, and we have likewise a most rapid discharge, owing to the increased size of the vessels. In this stage the membranes often give way, and the fœtus escapes with the liquor amnii, whilst the rest of the ovum is retained for some hours, or even days, when it is at length expelled with coagulated blood. In some instances the whole ovum comes away entire. After the expulsion the hæmorrhage ceases, and is succeeded by a discharge somewhat resembling the lochia.

With regard to the symptoms and duration of abortion, there is a great diversity in different instances. In some cases the pains are very severe and long-continued; in others, short and trifling. Sometimes the hæmorrhage is profuse and alarming; at other times, although circumstances may not be apparently very different, it is moderate or inconsiderable. Often the sympathetic effects of the stomach and bowels are scarcely productive of inconvenience; whilst in the greater number of instances they are very prominent symptoms. As there is a diversity in the symptoms, so there is also in the duration of abortion; for, whilst a few hours in many, and not above three days in the majority of cases, is sufficient to complete the process, we meet with other instances in which it threatened for a long time, and possibly some weeks elapse before the expulsion takes place.

Floodings are more or less dangerous according to the stage of pregnancy in which they happen. The farther a woman is advanced therein, the greater will be the risk, especially if unaccompanied by labour pains, as the mouths of the vessels which pour out the blood are much enlarged during the last stage of pregnancy, and of course a vast quantity will be discharged in a short space of time. Although miscarriages before the fifth month are seldom attended with immediate danger, the loss of blood being usually small, they nevertheless frequently lay the foundation of many grievous ailments by happening repeatedly. Some women are visited by habitual miscarriages, and observe a stated period for several successive pregnancies, which is more usually about the third month than at any other time.

The danger of abortion is to be estimated by considering the previous state of health and habit of the patient, and by attending to the violence of the discharge, the duration of the complaint, the difficulty of checking it, the disposition to expulsion which accompanies it, the period of gestation at which it is threatened, the frequency of its occurrence, and its combination with spasmodic affections or convulsions.

Previous to my pointing out the best means for checking an abortion, and the method of conducting the woman through it when it cannot be avoided, it appears proper to notice those steps which should be taken for preventing miscarriages in those to whom they are rather habitual. In all such cases it will be highly necessary to attend to the history of such former accidents, to the usual habitudes and constitution of the woman, and to her condition when she becomes pregnant.

A woman that is subject to habitual abortions, and who is of a full plethoric habit, ought to be bled just before the usual time of her miscarrying. She should likewise keep her body perfectly open with gentle aperient medicines; use a spare diet, consisting principally of vegetables, and avoid all agitations of the mind, severe exercise, violent efforts, and such objects as may be likely to make a disagreeable impression on her. The sleep should be

abridged in quantity, and not be taken on a bed of down, but on a firm mattress, preventing at the same time the accumulation of too much heat about the body. Every day she ought to take regular and moderate exercise, being cautious at the same time not to carry it to the length of exciting fatigue.

To bridle the circulation in women of a full plethoric habit that are subject to habitual abortions, in addition to drawing off a little blood from the arm when the pulse is full or inclined to throb, it would appear advisable to give half a grain of digitalis twice or thrice a day, continuing this medicine until after the usual period of the woman's miscarrying.

In women of a weak lax habit, bleeding would be highly improper as a means of preventing habitual abortion. For such, a nutritive and generous diet, moderate exercise in a carriage, cold bathing, and a course of chalybeates, with other tonics, will be necessary, the patient at the same time avoiding all exciting causes. Until gestation be far advanced, it would even be advisable to live *absque marito*. Indeed, in every instance of habitual abortion, whatever the condition may be that gives rise to it, it will be essential that the greatest attention be paid to the avoiding the exciting causes. In some cases it may even be necessary to confine the patient to her room until the period at which she usually aborts is past.

In those cases of habitual abortions accompanied with spasmodic pains in the uterus, or a disposition to convulsions, opium given in small doses twice a day might prove eminently serviceable.

Where nausea or vomiting prevails in a high degree, in addition to the means before pointed out, we may apply either an opium plaster or a blister to the region of the stomach.

An abortion being threatened in consequence of some slight separation of the placenta from the uterus, may frequently be stopped by immediately adopting proper steps, and the woman be enabled to go out her full time.

On the first appearance of a flooding, the woman should be confined to her bed, and be placed with her hips somewhat more elevated than her head, keeping her at the same time perfectly cool and extremely quiet, debarring her of all food of a heating stimulant nature, giving her cold liquors to drink sharpened with some agreeable acid, and applying linen cloths wetted in vinegar and water to the loins and private parts. Ice (if to be procured) contained in bladders and laid on the thighs and pubes, may occasionally be substituted.

With the view of moderating the symptoms attending the progress of a threatened abortion, and preventing it if possible from actually taking place, it may be proper, in robust and plethoric habits, and where the pulse is in any degree full and frequent, to take away a little blood from the arm; after which, if the bowels are confined, we may administer a laxative clyster.

If the discharge is copious, and is accompanied with irregular

spasmodic contraction of the uterus, or with severe pain, it will be advisable to prescribe opiates in small and frequently repeated doses, so as to keep up a constant effect, and they may be combined either with refrigerants* or with astringents,† or with both. Equal parts of tincture of opium and sulphuric acid make a good medicine in uterine hæmorrhage; but it is only in such cases as are attended with irregular spasmodic contractions, or with severe pains, that opium is given by the most judicious practitioners. To assist the effect of the medicines, anodyne clysters may be injected from time to time.

Astringent injections composed of a saturated solution of alum, sulphate of zinc, or the plumbi acetas, or a decoction of oak-bark, are often employed in floodings; and where the hæmorrhage is slight or remits for any length of time, they undoubtedly will prove beneficial, and ought therefore to be used as mentioned under the head of Menorrhagia; but in floodings unaccompanied by any remission, they are by no means likely to afford much relief.

In such cases it will be best to trust to the formation of a coagulum. Rest will be absolutely necessary if we wish the woman to go out her full time, and therefore it is sometimes necessary to confine her for a few weeks perhaps to her bed, at the same time that we put her upon an effective course of digitalis,‡ giving her

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* 1. ℞ Infus. Rosæ compos. f. ℥jss.

Potassæ Nitratis, ℈j.
Tint. Opii, ♏ x. M.

ft. Haustus, 3tia vel 4ta quâque horâ sumendus.

† 2. ℞ Confect. Opii, ℈j.

Aq. Menth. Virid. f. ℥jss.

Tinct. Catechu,
——— Kino, āā f. ℥ss. M.

ft. Haustus 4tis aut 6tis horis capiendus.

Vel,

3. ℞ Aluminis, gr. xv.
Gum. Kino, gr. v.
Opii, gr. ss.
Confect. Ros. q. s. M.

ft. Bolus 6tis horis sumendus cum cochl. iij. Infusi Rosæ aciduli.

‡ 4. ℞ Pulv. Digital. Purp.
Opii, āā gr. ss.
Confect. Ros. q. s. M.
ft. Pilula 4tis horis sumenda.

Vel,

5. ℞ Tinct. Digital. ♏ xiij. 4tâ quâq. hor. ex quovis vehiculo.

* 1. Take Compound Infusion of Roses, one ounce and a half.
Nitrate of Potass, one scruple.
Tincture of Opium, fifteen drops.
Mix them. This draught is to be taken every three or four hours.

† 2. Take Confection of Opium, one scruple.
Mint Water, one ounce and a half.
Tincture of Catechu,
——— Kino, of each half a drachm.
Mix them, and give this draught every four or six hours.

Or,

3. Take Alum, fifteen grains.
Gum Kino, five grains.
Opium, half a grain.
Confection of Roses, a sufficiency.
Mix them, and let this bolus be taken every six hours, with three table-spoonsful of the Acidulated Infusion of Roses.

‡ 4. Take Powder of Purple Foxglove,
Opium, of each half a grain.
Confection of Roses, a sufficiency to form a pill, which is to be taken every four hours.

Or,

5. Take Tincture of Foxglove, twenty drops every four hours, in a little water, or any like vehicle.

an anodyne at bedtime, but taking care to keep the bowels in a proper state by some gentle aperient medicine.

Where we cannot prevent the abortion, our study must be to conduct the patient safely through the process; and the point which first claims our attention is the hæmorrhage. Bleeding is an operation employed by some practitioners to check this; but unless the vessels are above their natural force and strength of action, it is not likely to do any good. Indeed, the fulness and strength of the pulse are lost much sooner in an abortion that can be explained by the mere loss of blood. Instead of bleeding, we had better therefore give the digitalis, if there is no irritation at the stomach. In protracted cases, where the discharge has continued long, this medicine will be highly proper.

When the means above mentioned have been pursued without the desired effect, and the woman becomes exposed to imminent danger from great loss of strength, it will then be necessary to have recourse to powerful astringents,* such as zinci sulphas and plumbi acetas. Of this last we may give one, two, or even three grains, repeating the dose every three or four hours, according to the urgency of the case. As soon, however, as the hæmorrhage has ceased, a gentle purge of the oleum ricini should be administered, in order to prevent any bad effect from the action of these remedies on the coats of the stomach and intestines. Astringents used internally have, however, been thought by some to possess little effect unless they excite sickness, which is a different operation from what is expected from them.

The application of linen cloths dipped in cold water to the back and external parts, will have a much better effect than internal astringents, and ought therefore never to be neglected. The introduction of a small piece of smooth ice into the vagina has often a very speedy effect in retarding the hæmorrhage. A snow-ball wrapped in a bit of soft linen will have the same effect; but neither

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Vel,

6. ℞ Infus. Digital. f. ℥ss.
Tinct. Cardam. f. ℥ij.
Aq. Puræ, f. ℥vj. M.
ft. Haustus quartis horis adhibendus.

* 7. ℞ Zinc. Sulphat. gr. ij.—v.
Confect. Ros. ʒss.
Opii, gr. ss. M.
ft. Bolus 4tis horis sumendus.

Vel,

8. ℞ Plumbi Acet. gr. ij.
Extract. Catechu, gr. iij.
Opii, gr. ss.
Syrup. q. s. M.
ft. Pilula, 4tis horis capienda cum haustu Infusi Rosæ.

Or,

6. Take Infusion of Foxglove, half an ounce.
Tincture of Cardamom, two drachms.
Pure Water, six drachms.
Mix them, and let this draught be given every four hours.

* 7. Take Sulphate of Zinc, two grains to five grains.
Confection of Roses, half a scruple.
Opium, half a grain.
Mix them. This bolus is to be taken every four hours.

Or,

8. Take Acetate of Lead, two grains.
Extract of Catechu, 3 grains.
Opium, half a grain.
Syrup, a sufficiency to form a pill, which may be taken every four hours, with a draught of the Infusion of Roses.

of these should be continued so long as to produce pain, or much and prolonged shivering. The heat of the surface may also be moderated by covering the bed lightly with clothes, and admitting a free circulation of air.

The most effectual local method, however, of stopping the hæmorrhage, is by plugging up the vagina ;* and this is best done by taking a pretty large piece of soft cloth, dipping it in oil, and then wringing it gently. This is to be introduced with the finger, portion after portion, until the lower parts of the vagina be well filled. The remainder is then to be firmly pressed on the orifice, and fixed by a T bandage, so as to prevent the plug from being displaced. This acts by giving time to the effused blood to coagulate at the mouths of the bleeding vessels, thereby preventing any further discharge. In obstinate cases, previous to the introduction of the plug, we may insert a little pounded ice tied up in a rag or small bladder, if to be procured.

To recapitulate the means which we are to employ for restraining the hæmorrhage : if the pulse be full, hard, and frequent, bleeding is to be resorted to : but if not, we are to trust to digitalis : the application of cold to the thighs and pubes, admitting cool air freely into the bedchamber, keeping the heat of the body at a low temperature, absolute rest in an horizontal position, and which must be continued during the whole process, however long it may be, cold acidulated liquors for ordinary drink, light food taken in small portions at a time, carefully abstaining from every thing stimulant, and plugging up the vagina.

Where any sickness or great feebleness attends on an abortion, the body is to be kept at rest with the head low ; and we may at the same time give small quantities of some stomachic cordial, such as a few drops of æther in a little cinnamon-water, or a little peppermint-water with fifteen or twenty drops of the tincture of opium. In very urgent cases, Madeira or diluted brandy may be given, but these are not to be frequently repeated. Where spasmodic contractions attack the stomach, producing sudden and violent pain, a full dose of the tincture of opium conjoined with æther must be ordered immediately. Spasms about the intestines are also to be relieved by opium in some form or other.

Where abortion is accompanied by strong hysteric paroxysms, besides attending to the state of the discharge, the best practice is to keep the woman very cool, and to give her thirty or forty drops of tinctura opii, with about two drachms of tinctura valerianæ ammoniata in a little peppermint-water every four or six hours. A clyster composed of cold water, with the addition of two drachms of the tincture of assafœtida, is also sometimes of service.

In all cases where a considerable hæmorrhage has begun, but particularly at an advanced stage of pregnancy, the first thing of importance to be inquired into and ascertained is its cause, and

* See Mr. Burn's Treatise on Abortions.

this can hardly be done too early; for as long as the accoucheur allows himself to act without this piece of essential information, his practice must necessarily be uncertain, and the life of his patient be exposed to danger. In such cases it will therefore be of the utmost importance to subject the woman to an examination, and in effecting this it will be necessary to introduce the hand into the vagina, passing one finger without the os uteri. This will be preferable to the common mode; for in presentations of the placenta this part does not always adhere close to the orifice of the womb, but is sometimes attached inward to the collum uteri; and if we trust to the common mode of examination we shall be liable to fail in feeling the placenta, even when its presentation is the cause of the flooding.

If the placenta is in the right place, it is probable, at any rate it is possible, that the hæmorrhage may subside permanently by the aid of an horizontal posture, a low diet, the application of cold, and a use of the other means before noticed; but if on the contrary the placenta be placed over the mouth of the womb, however these remedies may afford a temporary relief, we may be assured that the discharge will return; for the next time that a dilatation of the os uteri takes place, and which must recur sooner or later, a fresh portion of the placenta will become detached, and other bleeding vessels unavoidably be opened. Our practice ought therefore to be determined by the result of the examination. If it appears that the placenta is in the right place, the means and remedies before pointed out may be trusted in, unless the symptoms be so alarming as to compel us to deliver the woman; but, on the contrary, if the placenta is discovered over the mouth of the womb, or very near thereto, even should there have been only one considerable discharge, we should watch the patient with the greatest vigilance, and proceed to deliver her as soon as the parts are sufficiently dilatable to allow the introduction of the hand without improper force.

In all cases during the last stage of pregnancy where our endeavours to stop or repress the hæmorrhage prove abortive, and the life of the woman becomes endangered by its severity, it will be advisable to deliver her as soon as possible, although we may encounter some difficulty, unless somewhat assisted by the coming on of the natural labour pains. If the ovum be still entire, and the pregnancy considerably advanced, the expulsive action is to be excited by rupturing the membranes.

It sometimes happens in abortions, that the whole ovum does not come away at once, but only the fœtus, and that either a part or the whole of the secundines remain behind. These by long retention give rise to an offensive discharge from the vagina, and a febrile state accompanied with hysterical affections. In such instances, instead of endeavouring to extract the remains of the ovum either with the forceps or fingers, which would be productive of irritation, it will be advisable to keep the parts clean, by

injecting an infusion of chamomile-flowers with a small quantity of oxygenated muriatic acid ; to keep the bowels open with gentle laxatives or clysters ; to support the strength by light nourishment, with small portions of wine frequently repeated, and plenty of subacid fruit ; whilst at the same time we procure rest or allay irritation by opiates, if necessary.

After every abortion the woman should be confined to bed for a few days, as getting up too soon is apt to produce a debilitating discharge. Should any morbid symptoms present themselves, they are to be obviated by a suitable treatment. If the patient continues weakly for any time, the use of a cold bath, with bark and other tonics, a generous diet, and pure air, will be necessary.

It has been before observed, that miscarriages are sometimes induced during the first and second month of gestation by the fundus uteri being retroverted and pressed down between the rectum and the vagina ; in which case they are preceded by a difficulty of making water, and a consequent tumour of the bladder, together with a violent pain about the perinæum or rectum. On such occasions draw off the urine with a catheter, and inject an enema with sixty drops of the tincture of opium, if it can be done. Should these symptoms recur after the miscarriage, a wax candle, or a pessary, made by rolling some emplastrum plumbi spread on linen may be introduced into the rectum, and worn as a compress to prevent the return for a few days, till the parts recover their strength.—See Dr. Hunter's Tables of the gravid Uterus, and London Medical Observations, vol. iv. p. 388.

DISEASES OF THE PUERPERAL STATE.

PARTURITION, it is well known, is a natural process, and cannot therefore be considered as a disease ; but still it often lays the foundation of many distressing complaints, and is now and then attended suddenly even with fatal consequences.

On the separation of the placenta, and on the sudden removal of pressure on the expulsion of the uterine contents, every parturient woman encounters some degree of risk : the latter is indeed not unfrequently a source of danger, which has not been sufficiently insisted upon and practically attended to.

A woman sometimes appears safely put to bed after an easy and natural labour ; she has suffered no unusual loss of blood on the separation and removal of the placenta ; the uterus, on the application of the hand, is found well contracted, and the patient thus far at least appears in a fair way to do well : but notwithstanding these favourable appearances, and perhaps even during the congratulations of her friends upon the termination of her sufferings, she complains of a degree of faintness, attended with an inexpres-

sible sensation of sinking: this is followed by restlessness, with an anxious depressed countenance, and occasionally by pain and a sense of constriction at the pit of the stomach; and expressions of alarm for approaching dissolution are not unfrequently repeated. Shortly afterwards the restlessness increases, the countenance becomes more dejected and ghastly, the pulse gradually sinks and fails in its stroke, the oppressive constriction on the epigastrium becomes intolerable, so as considerably to affect respiration; and if relief to these symptoms be not speedy, she becomes shortly a corpse.

That a woman may die suddenly from the rupture of a vessel in the brain, or in the thoracic or abdominal cavities, during the violent efforts of labour, is a conclusion sufficently natural; but in accidents of this nature there would be symptoms of pressure on the sensorium in the one instance, and of internal hæmorrhage in the other; and the cause of death on inspection would be apparent.

To theorize or reason on a parturient woman suddenly falling into deliquium animi, and almost immediately expiring, is inconsistent with the nature of this work; but it has been attributed to the removal of pressure from the parietes of the abdomen, and the contents of its cavity.

At the commencement of faintness without loss of blood, we should have recourse to the exhibition of brandy, or other spirits, undiluted or diluted, according to the urgency of the symptoms and the rapidity of their progress, and in such quantity as may seem adequate to answer the intended purpose. That being attained, and the patient relieved, the medicated stimuli, as camphor, æther, volatile spirit, cordial tinctures, &c. may be substituted. Moderate pressure upon the abdomen with the hand, or a bandage applied round the body, will assist the general intention; and the patient ought on no consideration, to be allowed to raise herself from the recumbent posture till she be so far recovered as to warrant security from the recurrence of the symptoms of alarm and danger.

The most usual complaints, however, which occur after delivery, and which demand the attention and assistance of the medical practitioner, are as follow; viz.

AFTER-PAINS.

Shortly after delivery these usually come on, and with some women prove remarkably severe. The quicker the labour has been, the slighter will they prove in general. Women with their first child are seldom much troubled with after-pains; but as the uterus is thought to contract less readily after each future labour, so they are more liable to suffer from them in any succeeding delivery than in the first.

When after-pains prove so troublesome as to deprive the patient

of her rest, it will be necessary to have recourse to opiates joined with other antispasmodics.* Heated cloths or bladders filled with warm water may be applied as an external fomentation. These means are to be assisted by keeping up a sufficient pressure on the belly at the same time, by means of a broad bandage.

COSTIVENESS.

This is apt to prevail after delivery, and should always be removed by a laxative clyster, or some gentle purgative, such as a solution or some neutral salt and manna, or about an ounce of the oleum ricini.

FLOW OF THE LOCHIA.

In all women a certain degree of hæmorrhage usually takes place after delivery, produced by the removal of the placenta, which thereby lays bare the mouths of the blood-vessels in the inside of the uterus ; and this commonly continues until the womb contracts to such a size as to close them up again. The discharge for the first four or five days consists usually of florid blood, after which time it assumes a mucous appearance, and so ceases gradually.

In weak and relaxed habits it sometimes happens, that instead of saturating a cloth now and then, as is natural to all women, the blood gushes out with such rapidity and violence as to run quickly through all the bed-clothes, and even to soak through the bed itself; in which case the patient will be reduced to a state of great debility if the hæmorrhage is not soon restrained. To effect this, the means recommended under the heads of Menorrhagia and Abortions must be adopted.

Where a suppression of the lochia ensues before the accustomed period, the discharge ought again to be promoted, if possible, by plentiful dilution, and the application of warm fomentations to the parts. Should these means prove ineffectual, gentle evacuation from the bowels must be made.

THE MILK FEVER.

About the third or fourth day after delivery, the breasts generally become turgid and painful, from the secretion of milk which

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* 1. ℞ Aq. Cinnam. f. ℥j.
Tinct. Opii, ♏ xx.—xxx.
—— Castor. f. ℥ss.
Syrup. Violæ, f. ℥ij. M.
ft. Haustus horâ somni sumendus.

Vel,

2. ℞ Castorei, gr. v.
Camphoræ, gr. iij.
Opii, gr. jss.
Confect. Rosæ, q. s. M.
ft. Bolus capiat horâ somni.

* 1. Take Cinnamon Water, one ounce.
Tincture of Opium, thirty to forty-five drops.
——— Castor, half a drachm.
Syrup of Violets, two drachms.
Mix them. This draught is to be taken about bedtime.

Or,

2. Take Castor, five grains.
Camphor, three grains.
Opium, one grain and a half.
Confection of Roses, a sufficiency to form a bolus, which may be taken at bedtime.

then takes place in them. When this is moderate and free, no inconvenience will be experienced; but when copious, and accompanied by any obstruction in the lactiferous tubes in consequence of the use of some repellent application or of an exposure to cold, the breasts will then become hard, swelled, and painful, and a small fever will arise, accompanied by nausea, restlessness, pains in the head and back, and a considerable degree of thirst.

To prevent any consequences of this kind, it will always be advisable to apply the child to the breasts at a very early period after delivery. By delaying to do so immediately on the secretion of milk commencing, the breasts are not only apt to become much enlarged and distended, but the nipples are often so much retracted, that the child cannot lay hold of them without the greatest difficulty.

Where the mother's health will not admit of her suckling the child, or any other thing happens to prevent it, she should be careful to have her breasts drawn three or four times a day by some other person; and with the view of preventing a copious secretion of milk, she should use a very spare diet, keep her body perfectly open with laxative medicines, and abstain as much as possible from all liquids. This mode of proceeding will be far preferable to the use of repellent applications to dry up, or put a stop to the secretion.

If any degree of fever arises, besides confining the patient to a spare diet, keeping her very quiet, and obviating costiveness by means of cooling laxatives, we may give her small and frequently repeated doses of antimonials, together with refrigerants, such as the nitrate of potass, as advised under the head of simple Fever.

INFLAMMATION AND TUMOURS IN THE BREASTS.

From exposure to cold, and neglecting to put the child at an early period to the breasts, or to get them drawn by some other person, accidents of this nature happen very frequently to lying-in women.

With respect to the mode of treating these kind of tumours, practitioners differ very much; some asserting that discussion should always be attempted, and others, that they ought to be allowed to suppurate; as when the discussion does not succeed, there may be some danger of inducing a scirrhous affection of an obstinate nature. I think the same practice should be adopted in this case of inflammation as in every other, and that the discussion of the tumour ought by all means to be attempted on its first appearance; the distress and pain which always attend on a suppuration of the mamma being very great. When the inflammation and swelling have been of such long standing as to show an evident tendency to suppurate, any attempt to discuss the tumour will not be advisable.

Where discussion is proper, recourse should be had at a very early period to a strict pursuance of the antiphlogistic plan. The strength is to be supported by a cool spare diet; the body is to be

kept perfectly open with mild laxatives; febrile heat is to be abated by refrigerants, such as the nitrate of potass, with the aid of frequent small doses of some antimonial, such as the pulvis Jacobi, pulvis antimonialis, or solution of tartarized antimony; pain and irritation are to be allayed by sufficient doses of opium; and the inflammation, when considerable, is to be abated by means of leeches applied to the part, as likewise by the constant application of linen cloths dipped in some sedative lotion.* To assist the effect of these means, the breasts are to be evacuated frequently throughout the course of the day, but more particularly the one diseased, either by the infant or some other person accustomed to the business. When they are so much swelled as not to allow of laying hold of the nipple, the proper glasses made for that purpose should be employed.

If the tumour proceeds to suppuration, notwithstanding we may have used every endeavour to prevent it, we should then assist the operations of nature by the application of emollient poultices and fomentations. As soon as the suppuration is completed, the tumour should be opened, after which it may be dressed with dry lint, and a pledget spread with some kind of digestive ointment be laid over all. Should any fresh suppuration ensue, which not unfrequently happens, the same mode of treatment must be adopted; and that proper pus may be formed, the bark of cinchona, with a moderate quantity of wine, will be necessary.

EXCORIATIONS OF THE NIPPLES.

From the constant state of moisture in which these parts are kept with those who give suck, such occurrences are very apt to happen. When excoriations do arise, the parts should be washed two or three times a day with a diluted solution of alum, the superacetate of lead, or a few drops of the liquor plumbi acetatis, in rose-water, and then be sprinkled with a little powder of calamine or tutty, or they may be dressed with a little of what is recommended below,† thinly spread on lint, and so applied to the parts.

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* 1. ℞ Liquor. Ammon. Acetatis, f. ℥ij.
Spirit. Rectific. f. ℥ij.
Aq. Distillat. f. ää ℥ij. M.

ft. Lotio.

Vel,

2. ℞ Ammon. Muriat. ℥ij.
Acidi Acetic. dilut. f. ℥ij.
Spirit. Camphoræ, f. ℥ss.
Liquor. Plumbi Subacet. ℥ xvj. M.

† 3. ℞ Sodæ Sub-boratis, ℥ss.
Mellis, f. ℥ss.
Farinæ Tritic. q. s. ad consistentiam idoneam. M.

* 1. Take Solution of Acetate of Ammonia, Rectified Spirit, Distilled Water, of each two ounces.
Mix them and use them as a wash.

Or,

2. Take Muriate of Ammonia, two drachms.
Distilled Vinegar diluted, two ounces.
Camphorated Spirit, half an ounce.
Solution of Subacetate of Lead, twenty-five drops.
Mix them.

† 3. Take Sub-borate of Soda, half a drachm.
Honey, half an ounce.
Wheaten Flour, a sufficiency to give the whole a proper consistence.

To prevent the sore from being aggravated by sticking to the woman's clothes, a little cup made of wax may be laid over the nipple which is the part most apt to suffer. If only one nipple is affected, the child may be confined to the other; but if both are affected, and the pain occasioned by its sucking is too great to be borne, the woman must then desist from the duties of a mother until the excoriations are somewhat healed, taking care however to have her breasts drawn regularly twice or thrice a day. As long as we are under the necessity of applying any of the preparations of lead to the nipples of the mother, it will be prudent not to suffer the child to suck her, as there is reason to fear that it might be materially injured by so doing. Where this cannot however be dispensed with, the part should be well washed with a little warm water each time previous to giving the child the breast.

When great soreness of the nipples has taken place, it has been proposed, with the view of protecting them, to use an artificial teat, by which the child will be able to suck tolerably well, and the nipple itself, being undisturbed, to heal soon. The way in which one of these substitutes is prepared, is to procure a fresh teat from a heifer, and scooping out the inside, to steep it well in cold water, then put it into spirits till an hour or two before using it, when it must be again laid in water to take away the spirituous taste. The teat is then to be wiped dry, and sewn closely and firmly at the edges to the row of holes made in the shield. Such shields are usually made of silver, and may be procured from Mr. Savigny, the instrument maker; but ivory ones turned on the same model will answer equally well. The teat ought to project somewhat longer than the shield, that it may the more readily yield to the infant's mouth. Great attention should be paid to washing the whole thoroughly after suckling, and to keep it constantly in cold water. A woman is often capable of giving milk with a flat or even concave surface, by drawing out the nipple with a glass tube that has a small ball to it, by which a vacuum is produced immediately the glass is removed: the child being put to the breast will keep it out by sucking until satisfied.

MILIARY ERUPTIONS.

In consequence of keeping women very warm, and of using a heating diet, it not unfrequently happens that miliary eruptions attended with some degree of fever, arise during a puerperal state. Sometimes they are dispersed over the whole body, but they are more usually observed about the neck and chest.

To conduct the patient with safety through the disease, the practitioner must have recourse to the means advised under the head of Miliary Fever. Should the eruptions strike in suddenly, and the pulse sink, blisters, with cordial sudorific medicines and wine, will be proper.

Affections of this nature may, however, be avoided in general by an attention to diet, by keeping the patient's body perfectly open,

and her bed lightly covered with clothes, and by admitting a proper and free ventilation through her chamber.

PHLEGMASIA DOLENS PUERPERARUM, OR THE PAINFUL INTUMESCENCE OF THE LOWER EXTREMITY INCIDENT TO LYING-IN WOMEN.

Although this disease must have existed as long as most of the others to which lying-in women are subject, still it seems to have been only slightly noticed by any of the ancient writers. Mr. White's Inquiry into its Nature and Causes, which made its appearance in the year 1784, was the first regular treatise on it in this country, and it excited the attention of other practitioners to the complaint. In the year 1792, Mr. Trye of Gloucester, published a small essay on the subject; and at different periods since that time, Dr. Ferriar, and Dr. Hull of Manchester, have written on it.

Phlegmasia dolens appears, however, to be a disease of no frequent occurrence; for Mr. White mentions, that out of 1897 women delivered at the Westminster General Dispensary, five only were attacked with it; and of 8000 women delivered at the Manchester Lying-in Hospital, and their own houses, no more than four were seized with it. During a practice of forty-five years only three cases have fallen under my care. When we find practitioners giving in a report of numerous cases which came under their observation, we may therefore naturally presume that they have mistaken other diseases for it, such as anasarca, phlegmon, erysipelas, abscess, rheumatism, peritonitis, and puerperal fever. The disease, however, to which, in my opinion, it bears the strongest resemblance, is the glandular affection of the thigh and leg, so frequently met with in the island of Barbadoes, and noticed under the head of Elephantiasis.

The characteristic of phlegmasia dolens is a firm, glossy, warm, tense, elastic, painful, sudden swelling, of a pale white colour, which attacks the hypogastric region, the loins, nates, groin, labium, pudendi, thigh, leg, and foot of a lying-in woman some days after delivery, or miscarriage at an advanced period of pregnancy. Mr. White looks on the swelling of the labium pudendi as an invariable symptom of the disorder; and, he asserts, that when one limb only is affected the intumescence is confined so exactly to the labium pudendi of that side, that if a line were drawn from the navel to the anus, it would be found never to go beyond that line in the smallest degree. We are told, however, by Dr. Hull, that the swelling of the labium pudendi is to be considered rather as marking the extent, than serving to characterize the complaint; and he positively denies that this particular symptom is always to be met with; for some cases had fallen under his care in which it did not exist. On this point, as well as on most others relating to the nature and cause of phlegmasia dolens, these gentlemen do not agree in opinion.

Mr. White attributes the proximate cause of the disease in

question to an obstruction, detention, and accumulation of lymph in the limb, and imagines the lymphatics to be obstructed as high up at least as where they enter the pelvis under Poupart's ligament, in consequence of some accident happening during labour, or some state peculiar to childbed. He conceives it might probably arise from the continued pressure of the lymphatic vessels by the head of the fœtus on the pelvis, which, he says, is often rough and sharp on its ridge, and might be followed by a rupture of these vessels in some part of their course.

The disease has been attributed by Mr. Trye to an obstruction of the lymphatics: but he apprehends that this originates in the inflammation of the trunk or trunks of these vessels, which inflammation may be excited by pressure, or the absorption of some acrimonious matter.

Dr. Denman entertains sentiments pretty similar to those of Mr. Trye; for he believes the disease to arise first in the inguinal glands by the absorption of some irritating principle in the discharge, the consequence of an unhealthy secretion from the uterus.

Dr. Ferriar is of opinion,* that phlegmasia dolens may exist independently of every circumstance regarding parturition,† and he does not think it impossible for it to arise before delivery. The violent pressure on the internal iliacs and the accompanying veins and nerves, which takes place during labour, must undoubtedly be considered as a powerful occasional cause of lymphatic inflammation, quite sufficient to account for the phenomena without the supposition of a rupture of the vessels.

He adds, that the constitution is much more irritable, more liable to febrile and inflammatory complaints after than before delivery. The balance of the circulating fluids is suddenly and violently changed; there are new determinations, new sympathies produced in a state of debility, agitation, and anxiety. It cannot, therefore, surprise us, that under circumstances so peculiar, a set of vessels, commonly exempted from inflammatory affections, should take on an unusual disposition.

These theories are rejected by Dr. Hull, as being inadequate to explain the various phenomena of the disease; and he offers the following, which he conceives to be more consonant to its real nature.‡ As predisposing and exciting causes to it, he enumerates—1st, the increased irritability and disposition to inflammation which prevail during pregnancy, and in a still higher degree for some time after parturition. 2dly, the over-distended or relaxed state of the blood-vessels of the inferior part of the trunk, and of the lower extremities. 3dly, contusions, or violent

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* See his Medical Histories and Reflections, vol. iii.

† It certainly may; for I had a case lately under my care in an aged woman, and of course unconnected with parturition.

‡ See his Essay on Phlegmasia Dolens.

exertions of the muscles about the pelvis and thighs. 4thly, Plethora, occasioned by a suppression or diminution of the lochia, or of the secretion of milk. 5thly, Food taken too freely; and, 6thly, Standing or walking too much or too early.

The proximate cause he supposes to consist in an inflammatory affection, producing suddenly a considerable effusion of serum and coagulable lymph from the exhalants into the cellular membrane of the limb; and he thinks that there exists a close connexion between phlegmasia dolens, puerperal fever, peritonitis, and some other disorders.

Dr. Davies* gives it as his opinion, that the proximate cause of phlegmasia dolens is a violent inflammation of one or more of the principal veins within and in the immediate neighbourhood of the pelvis, producing an increased thickness of their coats, the formation of false membranes on their internal surface, a gradual coagulation of their contents, and occasionally a destructive suppuration of their whole texture; in consequence of which the diameters of the cavities of these important vessels become so greatly diminished, sometimes so totally obstructed, as to be rendered mechanically incompetent to carry forward into their corresponding trunks the venous blood brought to them by their inferior contributory branches.

Dr. Hosack,† the learned Professor of the Practice of Physic and Clinical Medicine of the College of New York, much doubts that the primary seat of phlegmasia dolens consists in a violent and destructive inflammation of the iliac veins, and their contributing branches, as supposed by Dr. Davies; and from taking a general view of the disease, thinks it may be traced to an inflammation of the limb, involving all its parts, muscles, cellular membrane, cutis, lymphatics, glands, nerves, and blood-vessels. The success, too, which has generally followed the antiphlogistic treatment, where it has been vigorously pursued in the first stage of the disease, is certainly favourable to this view of the pathology of phlegmasia dolens.

Phlegmasia dolens generally takes place on one side only at first, and commonly begins in the hypogastric or inguinal region, or in the hip, or top of the thigh, and corresponding labium pudendi, preceded by rigors, and followed by pyrexia. In this case the patient perceives a sense of pain, weight, and stiffness in some of these parts, which are increased by every attempt to move the pelvis, or lower limb. If the part be carefully examined, it generally is found rather fuller or hotter than natural, and tender to the touch, but not discoloured. After a little time the pain increases, always becomes severe, and in some cases is highly excruciating: it extends along the thigh, and at length the top of the labium pudendi becomes greatly swelled and distended; but on this happening, the pain is usually somewhat alleviated in

* See his Paper in vol. xii. of the Medico-Chirurgical Transactions of London.
† ——— Essays on Various Subjects of Medical Science, vol. ii. p. 217.

these parts. It however extends down to the knee, and is generally most severe on the inside and back of the thigh. When it has continued for some time, the whole thigh becomes in its turn swelled, and the pain extending down to the leg and foot, these parts also swell; but on the swelling taking place, there is a considerable abatement of pain, and the woman does not experience much except she moves the limb.

The extremity, being now swelled throughout its whole extent, appears perfectly or nearly uniform, and is not perceptibly lessened by an horizontal position like an œdematous limb. It is whiter than the natural colour, is hotter than usual, excessively tense, and exquisitely tender when touched. When pressed by the finger in different parts, it is perceived to be elastic, little, if any, impression remaining, and that only for a short time. If a puncture is made into the limb, in some instances no fluid is discharged; in others, a small quantity of fluid escapes, which does not coagulate, but the whole of the effused matter cannot be drawn off in this way. The swelling of the limb varies both in degree and in the space of time requisite for its full formation. In most instances, it arrives at double the natural size, and, in some cases, at a much greater. In lax habits, and in patients, whose legs have been very much affected with anasarca during pregnancy, the swelling takes place more rapidly than in those who are differently circumstanced: it sometimes in the former class of patients arrives at its greatest extent in twenty-four hours, or less, from the first attack.

After some days, generally from two to eight, the febrile symptoms diminish, and the swelling, heat, tension, weight, and tenderness of the lower extremity, begin to abate, first about the upper part of the thigh or knee, and afterwards in the leg and foot. Some inequalities are found in the limb, which at first feel like indurated glands; but upon being more strictly examined, their edges are not so well defined as those of conglobate glands, and they appear to be occasioned by the effused matter being in different degrees of consistence in different points. The conglobate glands of the thigh and leg are sometimes felt distinctly, and are tender to the touch, but are seldom much enlarged; and as the swelling subsides, it has happened that an enlargement of the lymphatic vessels in some part of the limb has been supposed to be felt.

The febrile symptoms having gradually disappeared, the pain and tenderness of the limb being much relieved, and the swelling and tension considerably diminished, the patient is much debilitated, and the extremity feels stiff, heavy, benumbed, and weak. It seldom, if ever, returns to its former size, but usually is considerably enlarged for the remainder of life, being always more easily affected by cold than the other, and after exercise it will be more stiff and weak than the sound extremity. It sometimes happens, that after the disease abates in one limb, the other is attacked in a similar way, goes through the same stages, and continues much about the same time as the first.

Phlegmasia dolens is often slow in its progress and tedious in its cure; but it is rarely followed either by suppuration or gangrene; and still more rarely does it terminate fatally; the extravasated fluid being at length taken up, and returned into the circulation, although from the great distension of the limb there is usually much tenderness, pain, and a febrile disposition. We are told by Mr. White, that when not complicated with any other disease, he has never known it to have a fatal termination; neither has he ever observed the skin to be so discoloured as to point out the presence of local inflammation: on the contrary, it is of a paler white than ordinary, which circumstance has induced him to name the disease phlegmasia alba dolens puerperarum. By Dr. Hull we are, however, informed, that he has seen cases which have terminated in suppuration, as also in death.

With respect to the treatment of phlegmasia dolens, much must be left to the discretion of the practitioner, who ought to prescribe according to circumstances. Should the disease be complicated with any other, such as phlegmon, erysipelas, anasarca, thoracic inflammation, puerperal fever, or peritonitis, then the means which are advised under these heads must be resorted to, in addition to paying a proper attention to the complaint itself.

When a woman who is of a robust plethoric habit is attacked shortly after delivery with a painful tense swelling of one of the lower extremities, accompanied by much heat, thirst, restlessness, and other symptoms of pyrexia, the antiphlogistic plan ought certainly to be pursued. Bleeding from the system in a moderate quantity should be the first step adopted, after which the bowels may be freely evacuated of their contents by a purgative, consisting of a solution of sulphate of magnesia in an infusion of senna, repeating the medicine every other day. To promote a gentle and constant determination to the surface of the body, small doses of the pulvis antimonialis or antimonium tartarizatum combined with the common saline draught may be given every four hours, assisted in their effect by tepid diluting liquors. For the purpose of allaying pain and irritation, some opiate* may be administered

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* 1. ℞ Liquor. Ammon. Acet. f. ʒiij.
Misturæ Camphoræ, f. ʒj.
Tinct. Opii, ♏ xx.
Syrup. Papav. f. ʒij. M.
ft. Haustus, horâ somni sumendus.

Vel,

2. ℞ Tinct. Opii, ♏ xxv.
Vini Antimon. Tartarizat. ♏ x.
Aq. Puræ, f. ʒj.
Syrup. Simpl. f. ʒij.
ft. Haustus.

* 1. Take Solution of Acetate of Ammonia, three drachms.
Camphor Mixture, one ounce.
Tincture of Opium, thirty drops.
Syrup of Poppies, two drachms.
Mix them, and let this draught be taken at bedtime.

Or,

2. Take Tincture of Opium, forty drops.
Wine of Tartarized Antimony, fifteen drops.
Pure Water, one ounce.
Common Syrup, two drachms.
Mix them for a draught.

occasionally, and perhaps the compound ipecacuanha powder may best answer the purpose. The patient must be confined to bed, be lightly covered with clothes, and her chamber kept of a moderate coolness. To abstract morbid heat from the limb affected, linen cloths wetted with evaporating fluids of a tepid warmth ought to be kept constantly applied all over it.

If the inflammatory symptoms do not subside by the adoption of the means pointed out, it may be advisable to apply eight or ten leeches to the groin, and in a few days afterwards about half this number lower down on the thigh.

When the inflammation has ceased, it may be advisable to make use of a mild stimulating liniment to the surface, accompanied by bandaging the limb lightly. We may also exhibit tonics internally.

Such is the general treatment to be adopted in phlegmasia dolens, when arising in a robust or plethoric habit, and where the febrile symptoms run very high; but the antiphlogistic plan would certainly be improper for a woman of lax fibres, and who has already been much debilitated by floodings, or other evacuations. In all those cases which are marked with general debility, an impoverished state of the blood, and a diminution of the tone and action of the heart and arteries, we should pursue the following course:—

To remove the affection of the system, and at the same time expedite the cure of the local complaint, we should endeavour to restore proper energy to the constitution, as well as improve the state of the blood; and this is to be effected by bitters, chalybeates, and other tonic medicines, a nutritious diet, with a moderate allowance of wine, daily exercise on horseback, or in a carriage, but more particularly the latter, and by cold bathing. To assist in carrying off the effused fluid, it may likewise be advisable to employ diuretics, such as the supertartrate of potass, squill, digitalis, &c. combined with cinchona, cascarilla, and other tonics. —See Anasarca.

Mercury has been recommended both by Mr. Trye and Dr. Hull in phlegmasia dolens; but I think it is a remedy from which no benefit is likely to be derived, and particularly in debilitated habits.

Our attention is next to be directed to the local treatment. When the limb and labium pudendi are occupied by much pain, and any degree of inflammation, the application of two or three leeches will be proper; after which the parts may be well fomented with flannel cloths wrung out in hot vinegar, renewing these as often as they become cold. This simple means, unassisted by any other than merely keeping the bowels regular with gentle aperients, such as the neutral salts, has, I understand, been adopted in all cases of phlegmasia dolens with invariable success, in one of the best regulated lying-in hospitals in London. Should it fail, however, in other hands, some more powerful sedative or discutient may be

substituted, such as a solution of muriated ammonia in vinegar, or a diluted solution of the liquor plumbi subacetatis. A liniment composed of a drachm of camphor, dissolved in an ounce of olive oil, with about ten grains of powdered opium, and used night and morning, will be a good application. Much relief has been received by surrounding the limb with a soft poultice, composed of bran, olive oil, with the addition of half an ounce of tinctura opii, and a sufficient quantity of warm water to give it a proper consistence, renewing it morning and night.

To drain off some of the fluid effused in the limb, it will be advisable in an early stage of the disease, to apply a blister to the calf of the leg, renewing the application from time to time in the neighbourhood of the former, when it ceases to produce the desired effect. In some instances, coagulation quickly succeeds the effusion, and therefore neither scarifications nor punctures would be likely to prove beneficial.

Notwithstanding every attention, the complaint often leaves considerable weakness in the leg, requiring a laced stocking or roller applied round it from the bottom to the top, avoiding at the same time much standing or walking. To increase the action of the absorbents in the limb, frequent frictions with rubefacient liniments, or simply with the hand, flannel, or a flesh-brush, may be employed, the effects of which may be assisted by topical cold bathing, or by cold water, fresh or salt, dashed upon the parts, and by electricity. Immersing the limb in a bath of tepid sea water has sometimes been found beneficial. Probably the application of heat, in the manner advised for anasarcous limbs, might prove serviceable. —See Anasarca.

HYSTERITIS, OR AN INFLAMMATION OF THE UTERUS.*

In natural labours, as well as in those of a difficult sort, many causes of injury to the uterus and the peritonæum which covers it will be applied. The long-continued action of the uterus on the body of the child, and the great pressure made by its head on the soft parts, will farther add to the chance of injury. Besides these, an improper application of instruments, or an officiousness of the midwife in hurrying the labour, or extracting the placenta, may have contributed to the violence. To these causes may be added exposure to cold, by taking the woman too early out of bed after delivery, and thereby throwing the circulating fluids upon the internal parts, putting a stop to the secretion of milk, or occasioning a suppression of the lochia.

An inflammation of the womb is sometimes perfectly distinct, but it is more frequently communicated to the peritonæum, Fallopian tubes, and ovaria: and having once begun, the natural func-

* This disease, as well as the two which succeed, belong properly to the class of Pyrexiæ; but as the two first do not often occur in the unimpregnated state, and the last is a disease confined to that of the puerperal, I have judged it most proper to insert them all here.

tions of the organ become much disturbed, which event greatly adds to the disease.

It is oftener met with in women of a robust and plethoric habit than in those of lax fibres and a delicate constitution, particularly where they have indulged freely in food of a heating nature, and in a use of spiritous liquors. It never prevails as an epidemic, like puerperal fever, for which it has probably often been mistaken; and to this we may, with some reason, ascribe the difference in the mode of treating the disease which has taken place among physicians.

An inflammation of the uterus shows itself usually about the second or third day after delivery, with a painful sensation at the bottom of the belly, which gradually increases in violence, without any kind of intermission. On examining externally the uterus appears much increased in size, is hard to the feel, and on making a pressure upon it, the patient experiences great soreness and pain.

Soon afterwards there ensues an increase of heat over the whole of the body, with pains in the head and back, extending into the groins, rigors, considerable thirst, nausea, and vomiting. The tongue is white and dry, the secretion of milk is usually much interrupted, the lochial discharge is greatly diminished, the urine is high coloured and scanty, and if the inflammation has extended to the bladder, it becomes totally obstructed; the body is costive, and the pulse is full, hard, and frequent.

These are the symptoms which usually present themselves when the inflammation does not run very high, and is perfectly distinct: but when it is so extensive as to affect the peritonæum, those of irritation generally succeed, and soon destroy the patient.

Where the uterus has been ruptured, a vomiting comes on, and the matter thrown up is of a black colour, resembling coffee grounds, the pulse sinks and becomes irregular, cold clammy sweats break out, and frequent syncope ensues.

Uterine inflammation is always attended with much danger, particularly where the symptoms are violent, and the proper means for removing them have not been timely adopted. In such cases it may terminate either in suppuration, scirrhus, or gangrene and mortification.

Frequent rigors, succeeded by flushings of the face, quickness and weakness of the pulse, great depression of strength, delirium, and the sudden cessation of pain and soreness in the region of the abdomen, denote a fatal termination: on the contrary, the ensuing of a gentle diarrhœa, the lochial discharge returning in due quantity and quality, the secretion of milk recommencing, and the uterus becoming gradually softer and less tender to the touch, with an abatement of heat and thirst, prognosticate a favourable issue.

When shiverings attack the patient after several days' continuance of the symptoms, but little relief can be afforded by medicine, the event being generally fatal. In this case the woman emaciates

and loses her strength, becomes hectic, and sinks under colliquative sweating or purging.

Upon opening the bodies of women who have died of this disease, and where it existed in a simple state, little or no extravasated fluid is usually to be met with in the cavity of the abdomen. In some instances the peritonæal surfaces have been discovered free from the disease; while in others, that portion which covers the uterus and posterior part of the bladder has been found partially inflamed. The inflammation has been observed in some cases to extend to the ovaria and Fallopian tubes, which, when cut open, are often loaded with blood. The uterus itself usually appears of a firm substance, but is larger than in its natural state, and when cut into, a quantity of pus is often found. Gangrene and mortification are seldom, if ever, to be met with.

By an early attention to the disease on its first approach, we may often subdue it, and prevent the inflammation from proceeding to any great height. Our immediate and speedy care ought therefore to be directed towards diminishing the quantity of the circulating fluids, and weakening the action of the heart and arteries; and this is to be done by drawing blood from the system, regulating the quantity which we take away by the violence of the symptoms, the state of the pulse, and the age and habit of the patient. In repeating the operation, we are to be governed by the same circumstances, and by the effect produced by the former evacuation. In plethoric habits, a second or a third repetition may be necessary; but in those who are less robust, if the inflammatory symptoms are not entirely carried off by the first bleeding, it may be more advisable to draw off blood by the application of six or eight leeches to the belly, than to make use of the lancet again.

To remove the tension, and alleviate the pain and soreness, flannel cloths wrung out in a warm decoction of bruised poppy-heads and chamomile-flowers, with an addition of about an eighth of spiritus camphoræ, may be kept pretty constantly applied throughout the course of the day to the abdominal region, and at night it may be anointed with a little of the linimentum camphoræ. In using fomentations, due care must however be taken that they are not applied so wet as to run about the bed, and thereby occasion inconvenience to the patient.

Some practitioners of late have recommended the application of linen cloths wetted in camphor mixture and cold water to the abdomen, instead of warm fomentations.—See Peritonitis.

Injecting tepid water into the uterus morning and evening by means of a proper syringe, may be likely, I think, to add to the good effects of fomentations externally applied.

Evacuation by active purgatives would be improper in this inflammation; but it would be right to preserve the regular motion of the bowels, by giving from time to time, as may be found necessary, some gentle laxative, or by administering emollient aperient clysters, which perhaps may be the preferable way of procuring

stools, as they not only unload the intestines, but likewise act as fomentations.

In most internal inflammations blisters prove a useful remedy; but in that of the uterus, their application is attended with the risk of increasing the irritation in the system, and of adding to the inflammation, by affecting the bladder and kidneys. Whenever they are made use of in this disease with the hope of affording relief, they ought to be sprinkled with camphor, and be applied to the upper part of the thighs, with the view of remote counter excitement, and the patient should drink plentifully of diluting mucilaginous liquors. Diluents will indeed be proper, whether we have recourse to blistering or not.

To determine to the surface of the body, and excite a gentle perspiration, which often proves highly serviceable in this inflammation, it will be advisable to give diaphoretic medicines. As such, we may employ the pulvis ipecac. compositus, in the quantity of eight or ten grains, repeated every four hours; or the pulvis antimonialis, in the quantity of about two grains, and half a grain of opium, made into a bolus, with a little of the confectio rosæ rubræ. These may be washed down with two or three spoonsful of a saline mixture.

In order to alleviate the pain (which alone would greatly aggravate the disease,) procure rest, and prevent symptoms of irritation from arising, the use of opium is indispensably necessary, and its dose ought to be increased until the desired effect is procured. Opium is, however, not to be prescribed in hysteritis until the inflammation has been subdued by venesection and aperient medicines.

Should a diarrhœa arise spontaneously in the course of this disease, it ought by no means to be checked, unless it proceeds with such violence as to exhaust the woman's strength. Under such circumstances, the mistura cretæ, with an addition of a small quantity of tinctura opii, may be given with advantage. Should the remedy not be found sufficiently powerful in lessening the number of evacuations, three drachms of the tinctura kino, or catechu, may be added to about six ounces of the mixture.

Where the inflammation has extended to the bladder, and occasioned a suppression of urine, we must employ the catheter.

Throughout the whole course of the disease, the patient is to be supported by food of a light nutritive nature, and such as is easy of digestion, carefully avoiding all kinds of fermented liquors.

In chronic inflammation of the uterus, or state of scirrhosity, the repeated application of several leeches above the pubes or to the perinæum, the use of gentle laxatives, emollient clysters, and fomentations and blisters to the lower part of the abdomen, frequent immersion of the lower parts of the body in a warm slipper bath, with an antiphlogistic regimen, and detaining the patient as much as possible in an horizontal posture, appear to be the most probable means of affording relief at an early period. Hyoscya-

mus and conium, joined with cinchona and opium, both by the mouth and in the form of clyster, more particularly the latter, to assuage pain, together with injections of tepid water and milk, or of some gently astringent liquor, together with warm bathing, may be the most advisable remedies in the advanced or carcinomatous stage of the disease. In order to prevent excoriation from the acrimony of the discharge, some simple ointment should be applied to the parts over which it passes.

Too much caution cannot be observed by women in guarding against any exposure to cold after delivery; as they are thereby apt to bring on diseases, which, if they do not prove quickly fatal, not unfrequently leave effects behind them of which they will be sensible the whole future period of their life.

PERITONITIS, OR INFLAMMATION OF THE PERITONÆUM.

The peritonitis of the puerperal state appears to be only the common inflammation of the peritonæum attacking a woman already labouring under debility, and being somewhat conjoined thereby with puerperal fever.

Peritonæal inflammation frequently occurs in women after delivery, and is produced by the same causes which give rise to an inflammation of the uterus, viz. tedious and difficult labours, officiousness in the midwife, the use of instruments, the application of cold, and administering heating liquors to excess. The disease has by some authors been called puerperal fever; but this seems improper, as it neither is attended with contagion nor ever prevails epidemically; and therefore the term is more properly applicable to the disorder treated of under that particular head.

In some cases of peritonitis the inflammation attacks only a small portion of the membrane at first, and is afterwards communicated to the whole of it; and in others it occupies the whole at once. The patient usually is seized with rigors and shiverings, thirst, fever, and an accelerated pulse, and soon feels considerable pain, with soreness, either in a particular part of the abdomen, or over the whole of it. The uneasiness and pain increasing rapidly, the abdomen becomes puffed up and swelled to a size nearly equal to what it was before delivery. From the inflamed state of the parts, and the exquisite pain which prevails, the very weight of the bedclothes becomes irksome and insufferable; and in order to support it, the patient is obliged to lie on her back with her knees bent in towards her belly. She is, moreover, incapable of bearing the least motion.

The stomach in most cases is much affected, and a constant sickness, with a vomiting of bilious matter, ensues. The state of the intestines is variable; sometimes costiveness prevails, at others a purging, and sometimes the body is perfectly regular. The bladder likewise becomes affected, and there arises a constant inclination to make water, but which comes away, however, in a very small quantity at a time.

As the disease advances and the tumefaction augments, great difficulty of breathing ensues; and in consequence of the general determination to the bowels, the secretion of milk becomes much diminished, and is at last entirely stopped; the breasts are flaccid and empty, and the lochial discharge is perhaps wholly suppressed.

The system is usually affected with a mixture of general inflammation and symptoms of irritation; the pulse is frequent, small, and contracted, beating about 120 or 130 in a minute; the skin is dry and hot, with flushing of the face and redness of the eyes; the tongue is white and dry, with the prevalence of great thirst; the appetite is diminished, but not wholly lost; and the patient is restless, uneasy, and gets little or no sleep.

The disease continuing to proceed in its course, all the symptoms become highly aggravated, and at last a total cessation of pain ensues; the pulse becomes still smaller, but is at the same time more frequent; cold clammy sweats break out, the urine and fæces come away involuntarily, the extremities are cold, and the patient is carried off in the course of the sixth, seventh, or eighth day.

Chronic inflammation of the peritonæum is not a very unusual sequela of the acute species, when the patient survives that. We may regard the following appearances in a favourable light:—The pulse becoming fuller and less frequent, the skin moister and cooler, the respiration less laborious, the urine being voided in a proper quantity and less frequently, the return of the milk in the breasts, the re-appearance of the lochial discharge, a gradual diminution of the pain and tension in the abdomen, with the ability of remaining in a sitting posture, and the coming on of a gentle diarrhœa towards the close of the disease. On the contrary, we are to consider the sudden cessation of pain, with a sinking pulse, effusion, and tumefaction, as fatal symptoms.

Peritoneal inflammation is to be distinguished from enteritis by the pain being permanent; by its being increased by pressure, even before any tension has taken place on the abdomen; by its producing no inclination to go to stool; and by its not being diminished if this evacuation should take place spontaneously.

The appearances on dissection have been those of inflammation in the peritonæum covering the different viscera, as the stomach, liver, spleen, omentum, intestines, &c.; but that which covers the uterus and bladder is usually found in a higher state of inflammation than any other part. Moreover, there is a remarkable change in the omentum, which is frequently as thick as a person's hand,* and there is generally perceived in the cavity of the abdomen a large quantity of a fluid resembling serum, mingled with pus, and intermixed with shreds of coagulable lymph, or portions of solid matter, similar to what is mentioned under the head of Puerperal

* See Morbid Anatomy, by Dr. Baillie.

Fever. It seldom happens that gangrene or mortification of any of the viscera is to be observed; but the intestines are usually greatly distended with air.

In the cure of this disease, nearly the same mode of treatment which has been advised for an inflammation of the uterus must be adopted. Bleeding from the system to about sixteen or twenty ounces should therefore be had recourse to at a very early period, particularly where the patient is of a robust plethoric habit, and with such it may be necessary to repeat the operation within twelve hours. In those cases where there is no mixture of phlegmonous inflammation with the symptoms of irritation, drawing blood a second time by the application of a dozen leeches applied to the abdomen, may be preferable to taking it away from the arm.

In the pure peritonitis, local blood-letting should never be solely trusted to, and indeed ought not to be advised until there appears some diminution of pain from general bleeding, or till the constitutional effects occasioned by the local inflammation are partly removed, and the disorder thereby reduced to a state more nearly approaching to a simple topical affection. Then the repeated application of several leeches to the abdomen, so as to keep up a copious flow of blood, will be useful.

An occasional irregularity in the complaint often occurs, which is liable to mislead the practitioner: and that is, at the very first attack there is sometimes so great a degree of prostration of strength, or seeming debility, accompanied likewise by a pulse scarcely perceptible at the wrist, as might induce us to consider the patient nearly at the point of death, and unequal to undergo the treatment here recommended. These appearances, however, may be supposed to arise from the inflammation extending to the peritonæal coat of the stomach and intestines. Here the violence of pain and tenderness on pressure must be the chief criterion to determine our practice, but not the state of the pulse; and if they should be found exquisite, no accidental symptom should lead us from trusting chiefly to the lancet. Such a decision will soon be justified by a greater freedom in the action of the arterial system, by an abatement of the languor, and by a diminution of the pain and tenderness.

Emollient and antispasmodic fomentations to the abdomen by means of flannel cloths wrung out in a warm decoction of equal parts of chamomile-flowers and bruised poppy-heads, with a small addition of rectified spirit or spiritus camphoræ, will be proper remedies in all cases of peritonitis, and ought therefore not to be neglected.

Some cases are recorded in a late publication,* attesting the good effects of cold applications by linen cloths dipped in camphor mixture and water in this disease.

* See Observations on Peritonitis, by T. Sutton, M. D.

Under an apprehension that the application of a blister to the abdomen might prove injurious by its irritating effect, some physicians have objected to advise it in peritonitis, while others again have recommended it to be employed, under the idea that its determining the inflammation to the external parts, and thereby lessening it on the internal ones, will greatly counterbalance any excitement it may occasion. When the constitutional effects occasioned by the local inflammation are partly removed by general bleedings, and the disorder is reduced to a state more nearly approaching to a simple topical affection, there can be no doubt, I think, of the propriety of blistering the abdomen.

Probably, more benefit might result, generally speaking, not only in this and other visceral affections, by remote counter excitement, than from the prevailing practice of employing it in the immediate vicinity of the diseased organ. Thus it might prove more remedial to blister the upper parts of each thigh in peritoneal inflammation, and to apply fomentations or linen cloths dipped in camphor mixture and water, as may be judged most proper, over the region of the abdomen. A similar practice is certainly most salutary in phrenitis, and perhaps it might be safely extended to acute affections of the belly and chest.

To empty the bowels freely, it will be necessary to employ active purgatives from time to time. A pill composed of three or four grains of the submuriate of mercury, followed by a full dose of an infusion of senna with sulphate of magnesia, or of castor oil, will not fail to afford relief, by promoting several evacuations of fetid and dark stools.

Emollient clysters may be administered during the intervals of our employing purgatives, as they will not only assist in keeping the bowels open, but will act likewise as internal fomentations.

Should there prevail great irritation at the stomach, with frequent vomiting, the patient should be directed to drink freely of diluted mucilaginous liquors, taking every two or three hours a saline draught in the act of effervescence, with an addition of about twelve or fifteen drops of the tinctura opii.

In order to determine the circulating fluids to the surface of the body, and excite a slight degree of perspiration, we should administer small and repeated doses of some diaphoretic ;* and to pro-

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* 1. ℞ Pulv. Antimonialis, gr. ij.
Confect. Rosæ, gr. x. M.
ft. Bolus quartis horis capiendus.

Vel,

2. ℞ Pulv. Jacob. gr. v.
Opii, gr. ss.
Confect. Cort. Aurant. q. s. M.

Vel,

3. ℞ Pulv. Ipecac. Comp. gr. x. pro dos.

*1. Take Antimonial Powder, two grains.
Confection of Roses, ten grains.
Mix them, and take this bolus every four hours.

Or,

2. Take James's Powder, five grains.
Opium, half a grain.
Confection of Orange Peel, a sufficiency to form a bolus.

Or,

3. Take Compound Powder of Ipecacuanha, ten grains for a dose.

cure sleep and alleviate pain, having previously bled sufficiently, we may make an addition of opium, increasing the quantity according to its effects. These may be washed down with two or three table spoonsful of the mistura camphoræ, which will be likely to prove a serviceable medicine.

Where the urine becomes suppressed, by the inflammation having extended in a high degree to the bladder, a warm bath, with an occasional use of the catheter, may be necessary.

In the early stage of the disease, where phlegmonous inflammation simply prevails, it might be of service to make use of the nitrate of potass and other refrigerants; but at a more advanced period, and where symptoms of irritation arise, they would be improper. When these ensue, the cinchona bark, with a moderate quantity of wine, ought to be given. Should the stomach not be capable of retaining the powder, a decoction or infusion may be tried, with a small addition of the tinctura calumbæ.

If a gentle diarrhœa should come on in the course of the disease, it is by no means to be checked, unless when violent, as it may prove critical.

The oil of turpentine is a remedy which has been strongly recommended in puerperal peritonitis by Dr. Brenan of Dublin, and is said to have been employed by him with very favourable effects in several instances of the disease. In extreme or very urgent cases, after the failure of the other means which have been pointed out, it may be worthy of a trial.

Throughout the whole period of the disorder the patient is to be supported by food of a light nutritive nature, administered in small quantities at a time, and repeated frequently, so as never to overload the stomach.

Where effusion in the cavity of the abdomen with tumefaction takes place, no relief can be obtained by medicine: death is the infallible consequence.

Chronic peritonitis, the occasional sequela of acute, especially when the depleting plan has not been sufficiently acted upon, must be treated with leeches, blisters, and small doses of the submuriate of mercury, together with some active cathartic twice a week.

FEBRIS PUERPERARUM, OR PUERPERAL FEVER.

Great soreness, pain, and tension of the abdomen, short anxious breathing, uncommon quickness of the pulse, increased temperature of the body, tensive pain over the forehead, peculiar wildness of the eyes, prostration of the vital powers, suppression or diminution of the milk and lochia, a flaccid state of the mammæ, and an unnatural condition of the excrements, accompanied by diarrhœa, may be regarded as the pathognomic symptoms of puerperal fever. Its epidemical prevalence at times, is a sufficient characteristic of its nature, because this circumstance never takes place with respect to simple inflammation of the uterus and peritonæum.

It is a disease peculiar to women after delivery, particularly in

hospitals, and is supposed to occasion the death of nearly one-half of those who die in child-bed. Until of late it had not been much noticed by medical writers, and even now various opinions are entertained with regard both to its nature and the causes producing it. Some have doubted if it deserves the title of specific, or ought to be regarded as of a particular genus; and these have been accustomed to look on it as only a simple modification of the known species of fever, taking its origin from the leaven of the prevailing epidemic constitution, whether inflammatory or putrid, modified by the habit of body, the mode of living, the age and temperament of the patient, the preceding causes, the season of the year and temperature of the air, &c. Others again have considered the disease as uterine and peritoneal inflammation, accompanied in its progress by fever of a low malignant nature, or typhoid type.* Indeed the diagnosis between purperal fever and the more common forms of peritoneal and uterine inflammation which occur in the puerperal state, is still obscure and undetermined: the limits bounding some of these cases are so indistinctly marked, that the one case seems to pass imperceptibly into the other.

A stoppage of the lochia has been assigned as one of the causes of puerperal fever; but the circumstance of their being sometimes absent and sometimes present at the attack, and during the progress of the disease, shows their perfect independence of each other. Others again have thought that puerperal fever is produced by the absorption of a putrid sanies arising from dead parts of the omentum or mesentery, or some other putrid material in the abdomen or uterus. By a few physicians it has been represented as owing its existence to an undue secretion of milk; while others have supposed that it derived its origin either from a redundancy, or too great acrimony of the bile, the secretion of which appears to be much interrupted during the time of gestation.

The late Dr. Young, professor of midwifery at Edinburgh, was of opinion, that the puerperal fever, strictly so called, is in every instance, the consequence of contagion; but he contends, that the contagious matter of this disease is capable only of producing its effects in consequence of a peculiar predisposition given by delivery and its consequences. In support of this doctrine he remarks, in a paper read in the Philosophical Society of that city, that for many years the disease was altogether unknown in the lying-in ward of the Royal Infirmary at Edinburgh; but that after it was once introduced into the hospital, almost every woman was, in a short time after delivery, attacked with it; although prior to delivery, she may have lain even for weeks together, not only in the same ward with the infected, but even in the very next bed. He further remarks, that it was only eradicated from the hospital

* See Facts and Observations relative to the Fever commonly called Puerperal, by J. Armstrong, M.D.

in consequence of the wards being entirely emptied, thoroughly ventilated, and new painted. After these processes, puerperal females in the hospital remained as free from the disease as formerly.

With respect to the infectious nature of this fever, a great contrariety of sentiment has indeed existed: the probability is in favour of its being so; but it is nearly impossible to form a decided opinion on the subject. Doubtless it will be the safest practice to consider it as infectious, and to cut off all intercourse of pregnant and parturient women with those who labour under it.

The real cause of puerperal fever is obscure, and not yet satisfactorily ascertained. It is, however, certain, that it has a strong tendency to the typhoid type in an advanced stage, although at its commencement, or during the first twenty-four or thirty-six hours, it is usually attended with inflammatory symptoms, and even with topical inflammation in the abdominal viscera, but more particularly the peritonæum, or membrane which envelopes them.

Under different circumstances, the disease assumes different appearances, and accordingly different distinctions have been laid down by writers between its various forms; but such distinctions are of no use in practice, and may perhaps be productive of embarrassment to the practitioner. We may conclude, I think, that the only essential difference in the cases that ought to be considered puerperal fever, consists in their degree of violence, and their being epidemic, or simply sporadic; for it seems to be admitted that whenever the disease exists epidemically, it is more urgent in all its symptoms.

The period at which women are attacked with this disease is uncertain, as in a few instances it has arisen at the distance of a week after delivery: but the most usual time of its attack is on the third or fourth day after that event. The patient is seized at first with a slight coldness and shivering, succeeded by pains in the head, ringing in the ears, flushing in the face, great anxiety, and restlessness. As the disease advances, the whole abdomen becomes affected, is highly painful to the touch, and much tumefied. She likewise feels great pain in the back, hips, and sometimes in the legs, and she performs respiration with difficulty, the breathing being short and laborious from the pressure against the diaphragm, as well as from an organic affection of the chest itself. If the milk has been previously determined to the breasts, it suddenly disappears on the approach of the disease; but if the attack of fever commences sooner, the milk does not appear. The lochia are altered both in quantity and appearance; the urine is turbid, small in quantity, and voided with pain, and a tenesmus often arises. The skin is hot and dry, the pulse weak and frequent, the number of pulsations being often from 110 to 130 in a minute; thirst prevails, and there is vast prostration of strength, with anxiety, depression of spirits, a disinclination to suckle, carelessness about her child, and watchfulness. To these symp-

toms are added a tensive pain over the forehead, and a peculiar wildness of the eyes.

A vomiting not unfrequently attacks at the same time, and in so high a degree as to prevent the smallest quantity of food or medicine from being retained on the stomach. The matter thrown up is of a dark porraceous colour, and often of a disagreeable smell. The functions of the primæ viæ are likewise much disturbed. At the commencement, they usually go on well; but in the progress of the disease, a severe purging often ensues, particularly in those cases where the abdomen has been much distended, and the dejections are abundant, serous, and putrid. It seldom happens that any violent delirium arises, but the patient is apt to fall into a low comatose state, wishing by no means to be disturbed.

After one or two days' continuance of these appearances, the fever often acquires a malignant and typhoid tendency, particularly in hospitals and confined situations, or when the state of the atmosphere predisposes to diseases of that nature; the lips, teeth, and tongue are covered with a dark brown fur; aphthæ beset the whole internal surface of the mouth, tongue, uvula, tonsils, and pharynx; the breath is highly offensive; the stools are fetid, of a dark brown colour, and pass off involuntarily; and in a few cases purple spots appear on different parts of the body.

Such in general is the course of the puerperal fever; the symptoms of which, however, may be often varied, according to the constitution of the patient, the degree of the disease, and its earlier or later invasion after delivery.

Puerperal fever is readily to be distinguished from that affection known by the name of after-pains, by the intervals of ease which attend these last, and by the absence of fever and abdominal tension; whereas in the former there is fever with its concomitant symptoms; great soreness and swelling of the abdomen, and an almost uninterrupted continuance of pain throughout the course of the disease.

Many circumstances evince a dissimilarity between the puerperal and miliary fevers, notwithstanding the symptoms of anxiety and oppression are common to both. In the puerperal fever the rigor is more violent, of longer duration, and not interrupted, as in the other. The pulse at first is fuller and stronger; the skin is more hot; and the tongue, whether moist or dry, though generally the latter, is not of a white but brownish appearance.

Peritoneal inflammation is the disease which bears the strongest resemblance to puerperal fever, but it never arises from contagion, or prevails epidemically.

By paying proper attention, we may in general be able to distinguish simple peritonitis from puerperal fever. In the last, the abdominal pain is not the most prominent symptom. There is more despondency, debility, and headach, less heat of the skin, less thirst, and less flushing of the face. In the former, the pain

in the abdomen usually increases rapidly after its commencement, and the swelling increases along with it: pressure excites considerable pain, and the fever is inflammatory throughout.

Hysteritis has its proper symptoms by which it may readily be distinguished from puerperal fever.

The progress of puerperal fever is sometimes so very rapid, particularly in warm climates and hot seasons, as to destroy the patient in forty-eight hours. Even in cases seemingly the most favourable, we should look on the event as doubtful, as the complaint is apt to be accompanied with delusive remissions, and indications arise in its progress which are by no means equal to the danger.

The risk seems however to be greater in proportion as the accession is sooner after labour. When the disease comes on at a late period after delivery, the depression of strength is usually less considerable, the tumefaction of the abdomen is less extensive, and the other symptoms are not so violent, and consequently there will be a greater chance for the woman's recovery.

The re-appearance of the lochia, and a gradual subsidence of the abdominal tension and soreness after copious stools, the pulse at the same time becoming slower, with a moist skin, may be regarded in a very favourable light. On the contrary, an agitated countenance, with a hurried unconnected manner of speaking, constant sighing, attended with a tossing about of the arms, pain and oppression at the chest, visual deceptions, imaginary strange sounds and voices, muttering and stupor, are to be considered as unfavourable symptoms. An extensive swelling of the belly, so as to sound on striking it with the fingers, sudden cessation of pain, irregularity in the pulse, coldness in the extremities, clammy moisture diffused over the whole body, frequent dark-coloured and fetid evacuations by stool, and an indifference to all external objects, denote certain and speedy death.

On a fair computation, three-fourths of the women who have been attacked with this disease have fallen sacrifices to it.

The morbid appearances observed on dissection are usually confined to the abdomen. The first thing that often presents itself is a collection of whey-like fluid in the cavity of the abdomen, which is sometimes so considerable in quantity as to amount to several quarts; and it has a peculiarity of smell different from any other fluid to be met with in the human body, either in health or disease. Where it is large in quantity, the surfaces of the different viscera and of the peritonæum will usually be found covered with a crust formed of a solid part of this matter, resembling coagulated lymph. If there be any insterstices between the intestines or the other viscera, they are frequently filled with large masses of the same, adapted exactly to the shape and size of such interstices. In a few cases, a deposit of a caseous and serous nature has been discovered likewise in the head, breast, and external cellular mem-

brane, as has before been observed. In most instances there is found a slight degree of inflammation in some part of the cavity; but it is not confined invariably to any particular place; as the uterus, ovaria, peritonæum, omentum, intestines, and bladder, have all in their turn been observed in a state of inflammation. In many cases of dissection, a considerable quantity of purulent matter has been found in the cavity of the abdomen.

Upon analyzing the fluid effused into the peritoneal cavity of a woman dying from this fever, it has been found to possess a perfect chemical identity with that furnished by the inflamed pleura. The peritoneal fluid, after depositing a copious whitish precipitate, which afforded albumen to the different re-agents, was of a clear yellowish-white colour, and had the property of turning green the syrup of violets. But the nature and proportion of the alkali endowing it with this property, have not been ascertained. The flocculi which float in the abdominal serum of puerperal subjects have been regarded as a cheesy substance, formed of the coagulum of the milk; but this seems erroneous. Ammonia mixed with the substance in question scarcely acts upon it as a solvent, and evaporation developes in it all the characters of albumen.

In a disease where the symptoms come on with such violence, where the progress is so very rapid, and the event so generally fatal, every assistance should be afforded as soon as possible. Unfortunately, however, there has prevailed a great diversity of opinion among physicians relative to the remedies to be employed during its first stage, some advising copious bleeding, and others highly disapproving of its being ever adopted. Under such a contrariety of opinion, it will be best to pursue that plan which seems most congenial to the nature of the disease.

I shall consider puerperal fever as admitting of the same variety of treatment with other affections in which an inflammatory disposition prevails on its first attack; but in which a typhoid and malignant tendency is to be observed after a continuance of one or two days.

During the first stage of puerperal fever (which should not be considered as extending beyond twenty-four or six-and-thirty hours from its attack), if the patient complains of abdominal pain and soreness, I am of opinion that we may advantageously resort to venesection, proportioning the quantity of blood that is drawn off to the habit of the patient and the violence of the symptoms. In strong plethoric women, it should not be less than twenty ounces, nor ought it to exceed thirty; and care should be taken that the orifice is made large, so as to produce a decisive effect at once.—(See Pleurisy.) A repetition of the bleeding ought in general to be avoided; but if judged indispensable, from the abdominal soreness and pain not being removed or materially alleviated within six hours, a smaller quantity, not exceeding twelve ounces, should be taken away after this interval. It is only during the first stage

of puerperal fever, however, that blood-letting is advisable; this being usually marked by inflammatory symptoms; whereas characters highly typhoid become manifest during its second stage.

In a few instances of this fever, extreme debility (marked by great depression of strength and a small feeble pulse) and a typhoid tendency, may be apparent from its commencement. In these it would be improper to draw blood from the arm; but where there is much abdominal pain, with great soreness, the application of several leeches to the belly may be advisable. In some countries, the applications of leeches to the vagina, or hæmorrhoidal veins, has been considered as the best mode of bleeding in this disease, but its inefficacy must be obvious.

The propriety of administering purgatives in puerperal fever has admitted of as much doubt as that of venesection. Some physicians observing that women who die of this fever are generally molested with a diarrhœa, have been induced to consider this symptom as of the most dangerous and fatal tendency, and which ought to be restrained by every possible means; whilst others again have regarded it rather as critical than symptomatical, and think it ought therefore to be moderately supported instead of being restrained. To procure stools where costiveness prevails, and remove putrid feculent matter, it appears reasonable that we might employ purgative medicines at the commencement of the disease with advantage; and possibly a few grains of the submuriate of mercury, with a small quantity of rhubarb or jalap, followed up by two or three large spoonsful of a solution of some neutral salt every hour or two, until copious evacuations are procured, will be most advisable. Where the disease is in an advanced stage, and the patient reduced in strength, dislodging the contents of the intestines by means of gentle laxatives, assisted by aperient clysters, appears to be the best mode of procuring evacuations, which at this period of the disease are usually of a dark brown colour, resembling coffee grounds, very copious, of the consistence of thick gruel, and with a fetid smell.

In my opinion, the most rational method of treating puerperal fever, but more particularly when attended by abdominal pain and soreness, is to abstract blood from a large orifice to a sufficient extent at the first onset of the disease, and then direct the attention to a free evacuation of the alimentary tube throughout the continuance of the disease, at first by purgatives, and towards the close by aperient medicines and laxative clysters.

A very interesting account of a puerperal fever which was epidemic, at Aberdeen, and published by Dr. Alexander Gordon, gives us to understand, that not only purgatives are useful in this disease, but likewise bleeding. He tells us, that the disease was infectious; that it seemed to arise from the contagion that was carried by the accoucheur, or nurse, from one lying-in woman to another; and that it began with violent unremitting pain of the

abdomen on the day of delivery or the next, with shuddering, and a very quick pulse, often 140 in a minute. If he saw the patient within twelve or twenty-four hours of her seizure, he took away from sixteen to twenty-four ounces of blood, which was always sizy. He then immediately gave a cathartic consisting of the submuriate of mercury and jalap. After this had operated, he prescribed an opiate at night, and so continued the purge and the opiate for several days.

He asserts, that almost all those whom he was permitted to treat in this manner early in the disease, recovered, to the number of fifty, and that almost all the rest died; but that when two or three days were elapsed, the patients became too weak for this method, and the matter was already formed which destroyed them.

Dr. Armstrong is of opinion* that puerperal fever bears a close analogy to typhus complicated with inflammation of the abdomen, and thinks it ought to be arranged under three varieties, namely, the sporadic, the epidemic, and the chronic. He also is perfectly convinced that bleeding at the first onset of the disease, assisted by purgatives, are the main remedies to be depended upon under every form; and he adds, moreover, that it is not simply bleeding and purging in which he places his confidence, but in copious bleeding, immediately succeeded by copious purging, or rather in the powers of these two means simultaneously exerted on the disease at its onset. Mr. Hey of Leeds,† is also an advocate for the same plan of treating this fever.

It often happens that nausea and a vomiting of bilious matter attend an attack of this fever. In such cases we may recommend a gentle emetic of ipecacuanha to be taken, with a view of cleansing the stomach: but I cannot agree with those who advise a repetition of it, as the operation of vomiting never fails to aggravate the pain, and likewise to exhaust the woman, besides endangering a great degree of irritation in the stomach, to which there is naturally too great a tendency.

Although I object to a repetition of ipecacuanha or antimonials, given so as to produce an emetic effect, still I think they may be administered with some advantage at the commencement of puerperal fever, in such small doses as to determine to the surface of the body. As a diaphoretic, I know of none preferable in the present instance to ipecacuanha, which may be prescribed in doses of about two grains, to be repeated every three or four hours; or perhaps it may be still more efficacious to give it combined with opium, as in the pulvis ipecacuanhæ compositus. Of this, about six grains made into a bolus, with a small quantity of confection of roses, may be taken as before mentioned, washing it down with

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* See his Illustrations of Typhus and other Febrile Diseases.
—— Treatise on Puerperal Fever.

† See Treatise on the same, by Mr. Hey.

a saline draught; and to make the diaphoretic effect more certain, the patient should drink frequently of diluting liquors, such as whey, barley-water, &c.

To alleviate the soreness and distension of the abdomen, we may recommend the application of fomentations both inwardly and externally; inwardly, by injecting tepid water into the uterus every four or six hours, and administering emollient clysters from time to time; and externally, by applying flannel cloths wrung out in a warm decoction of equal parts of chamomile flowers and bruised poppy-heads, with an addition of about one-third of rectified spirit, over the whole region of the abdomen; and these ought to be renewed as often as they become cold, taking due care that they are not so wet as to run about the bed and incommode the patient.

The warm bath has been recommended by some practitioners, and it often produces a calm and disposes to sleep; but this being the effect of exhaustion, it appears to be a doubtful remedy.

Where the abdominal cavity is highly painful to the touch, and is occupied by extensive inflammation, the application of cold to the parts by cloths dipped in camphor mixture and cold water, has been attended with a good effect.*

If the soreness and pain are not relieved by the means which have been suggested, then the application of a blister to the upper part of each thigh may be proper. Blistering the abdomen might not be advisable, at least not until the topical abstraction of blood had been adopted by the application of several leeches.—See Peritonitis.

Having employed gentle cathartics at an early period for the purpose of obviating costiveness and dislodging the putrescent matter from the bowels, we may then with safety have recourse to anodynes, administered so as to keep up a constant effect.† The dose of opium must depend on the severity of the pain, and the age and constitution of the patient, and it may be repeated every four or six hours. Opium, when administered in puerperal fever, diminishes the irritability of the system, as well as that of the stomach and intestines. It eases pain, produces sleep, and seems to excite a moderate diaphoresis. In a few instances, I think, I have observed it to obviate or relieve delirium in the same manner as in typhus.

Should there be any great irritation of the stomach, the saline

* See Cases of Puerperal Fever, by T. Sutton, M. D.

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† 1. ℞ Aq. Cinnam. f. ℥j.
Tinct. Opii, ℥ x.
Syr. Althææ, f. ℥ij.
Spirit. Lav. C. f. ℥ss. M.
ft. Haustus.

† 1. Take Cinnamon Water, one ounce.
Tincture of Opium, fifteen drops.
Syrup of Marshmallow, two drachms.
Compound Spirit of Lavender, half a drachm.
Mix them for a draught.

draught with a proper quantity of tinctura opii may be given, so as that the effervescence shall take place after it is swallowed, as advised under the head of Simple Fever. Should this medicine also be rejected, the vomiting may perhaps be restrained by opium in the form of pills, and by rubbing the region of the stomach frequently with some strong anodyne liniment. The application of a blister might excite injurious irritation. The strength might be supported by administering clysters composed of animal broths and other such nutritive liquids, until the stomach becomes tranquil, and will bear the introduction of proper nourishment.

If a gentle purging arises in the first stage or commencement of the complaint, it ought not to be too hastily stopped, as the fever has in some instances been carried off by such a spontaneous evacuation; but if the disease is of some days' standing, the stools very frequent, the patient much reduced, and no evident relief has been afforded by the diarrhœa, we must then give astringents,* joined with opium, to restrain it; and for ordinary drink she may take the mistura cornu usti. To support the strength, wine may be necessary; and this should be given in a moderate quantity, properly diluted with water, as likewise mixed with the food consisting of preparations of barley, sago, panado, Indian arrow-root, tapioca, and the like, varied now and then by broths, beef-tea, and milk.

The oleum terebinthinæ is a medicine which is highly spoken of by one or two practitioners in this disease, but further experience is requisite to satisfy us that it is deserving of the character ascribed to it.

It has been observed, that this fever, after continuing a day or two, very often acquires a malignant and putrid tendency. Under such circumstances it will be right to have immediate recourse to the bark of cinchona joined with the mineral acids, but more particularly the muriatic, as noticed under the head of Typhus Gravior, and to exhibit it freely in as large doses as the stomach will bear. If the powder is readily retained, it ought to be pre-

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* 2. ℞ Confect. Opii, ℈ss.—℈j.
Aq. Cinnam. f. ℥jss.
Tinct. Kino, f. ℥ij.
Spirit. Lav. C. f. ℥ss. M.
Haustus ter in die sumendus.

Vel,

3. ℞ Mistur. Cretæ, f. ℥iij.
Aq. Pimentæ,
— Cinnam. āā f. ℥ij.
Tinct. Catechu, f. ℥ij.
—— Opii, ℥ xxx. M.
ft. Mistura, cujus sumat cochl. larg. ij. quartis horis.

* 2. Take Confection of Opium, ten grains to one scruple.
Cinnamon Water, one ounce and a half.
Tincture of Kino, two drachms.
Compound Spirit of Lavender, half a drachm.
Mix them. This draught is to be taken three times a day.

Or,

3. Take Chalk Mixture, three ounces.
Pimento Water,
Cinnamon Water, of each two ounces.
Tincture of Catechu, 2 drachms.
—— of Opium, forty-five drops.
Mix them, and take two table-spoonsful every four hours.

ferred to any other preparation; but if not, a decoction or infusion may be substituted.* Should it be rejected in all these ways, it may then be given in clysters, with an addition of about five-and-twenty drops of tinctura opii to each. If it occasions any purging when taken by the mouth, a few drops of the tincture of opium may be added to each dose.

When there is no disposition to a putrid tendency, it will be best to wait till a remission of the symptoms, or a partial subsidence of febrile action has taken place, before we prescribe a use of the cinchona.

A late physician of eminence† in treating on this disease observes, that the cinchona, although given by him in the different stages of the complaint with remissions tolerably distinct, by no means answered the intention as a febrifuge; but that in a few cases where the intermissions were complete, it had succeeded. He likewise observes, that as a supporter of the general strength, it has been found of less service than might have been expected, on account of the disturbed and very irritable state of the bowels, which it has a tendency to increase. Instead of cinchona, he advises the calumba-root‡ in powder or infusion,§ in doses to be repeated every four hours.

If hiccups and subsultus tendinum arise in the progress of the disease, recourse must be had to antispasmodics, such as musk, æther, and the like; although it is probable they will avail but little. When any unusual coldness of the extremities is felt, the application of stimulating cataplasms will be proper.

The carbonate of potass is a medicine which is strongly recommended by Monsieur Guinot‖ in puerperal fever, as well as in all diseases connected with the secretion of milk in the female breast. He advises it to be given in doses of from ten to twelve grains three times a day, in any proper vehicle, and to employ at the same time alkalies externally, such as a solution of soap in a decoction of poppy-heads, taking care at the same time not to neglect

† Dr. Denman.

‖ See Extracts from his Memoir inserted in the third volume of the Medical and Physical Journal, pages 80, 165, 264, and 363.

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* 4. ℞ Decoct. vel Infusi Cinchonæ, f. ℥x.
Tinct. Cascaril. f. ℥ij.
Acid. Muriatic. ♏ xij. M.
ft. Haustus quartis horis adhibendus.

‡ 5. ℞ Pulv. Calumb. ℥ss.
Opii, gr. ss.
Confect. Rosæ, q. s. M.
ft. Bolus.

§ 6. ℞ Infus. Calumb. f. ℥x.
Tinct. Cort. Aurant. f. ℥jss.
Acid. Muriatic. ♏ ix. M.
ft. Haustus.

* 4. Take Decoction or Infusion of Peruvian Bark, ten drachms.
Tincture of Cascarilla, two drachms.
Muriatic Acid, eighteen drops.
Mix them. This draught is to be given every four hours.

‡ 5. Take Powder of Calumba, half a drachm,
Opium, half a grain.
Confection of Roses, a sufficiency to form a bolus.

§ 6. Take Infusion of Calumba, ten drachms.
Tincture of Orange Peel, one drachm and a half.
Muriatic Acid, fifteen drops.
Mix them for a draught.

other remedies indicated by the circumstances and symptoms of the case.

This alkaline treatment he recommends under the idea that the disease is occasioned by the predominance of an acid. Whether it acts by counteracting the acid, dissolving the clotted milk, by neutralizing the acid which may actually exist there, by its action on the organs of perspiration, or by inducing other useful crises, cannot be ascertained; but it appears to have proved very successful and advantageous with other practitioners besides Monsieur Guinot, and may therefore be tried at an early period of the disease. A combination of the carbonate of potass with the cinchona bark might probably be useful in cases of puerperal fever complicated with malignancy.

It would appear that the effluvia of a patient under puerperal fever is an animal poison sui generis, capable of acting on pregnant females, their situation giving the predisposition necessary for the operation of its influence. The usual mode of communicating the infection in private practice is by being delivered by some accoucheur who has lately been attending a woman labouring under puerperal fever, or her being visited by female friends who have been where it prevailed. It therefore behoves every practitioner when he meets with the disease to observe every possible precaution in changing his clothes, and by careful ablution of his hands to guard against conveying infection to other parturient women: moreover, all pregnant women should be excluded from the house; nor should the nurse or other persons about the sick be permitted to go abroad and visit women in a stage of pregnancy.

To prevent the disease from occurring, it will be proper to keep the patient's mind both before, during the time of labour, and afterwards, as free from every kind of uneasiness as possible, as anxiety might greatly predispose to an attack of it. She should likewise carefully avoid any exposure to the infection of fever before delivery, as well as to the occasional causes of it afterwards. Every woman lately delivered ought cautiously to guard against cold; but in doing this, her room should at the same time be kept of a proper temperature by allowing a sufficient ventilation.

It being a well-known fact that puerperal fever has been chiefly confined to close apartments and small hospitals, and that since the lying-in chambers have been made more airy and commodious, and the hospitals larger, the disease seldom prevails epidemically or becomes general, due attention should be paid to a free ventilation; for it is by no means improbable that a cool air in a lying-in chamber will frequently prevent, and its opposite be likely to induce, the phenomena of puerperal fever.

The patient should observe the strictest cleanliness both as to herself and the bedding. On the coming of the milk, her breasts ought to be drawn repeatedly throughout the course of the day by some person accustomed to the business, or by applying the child;

her body should be kept perfectly open after she is delivered, as well as before her confinement, by some mild purgative medicine, and she should abstain from all food of a heating or irritating nature.

An upright posture will be most proper, in order to discharge more readily any putrescent matter that may be in the uterus.

When the disease prevails as an epidemic among puerperal women, or occurs in a lying-in hospital, all communication ought immediately to be cut off between those who are affected and such as have lately lain in, or expect shortly to do so; and in order to root out the disease and stifle contagion, we should have recourse to fumigations, as advised under the heads of Malignant Fever and Dysentery, and afterwards to painting, white-washing, and a free ventilation.

In situations where puerperal fever has been prevalent, some advantage may be obtained by giving a decoction of the bark of cinchona with tincture of opium and cordials immediately after delivery. These will in some measure enable lying-in women to resist the powers of contagion.

MANIA PUERPERARUM.

The characteristics, symptoms, and treatment of madness arising in women after delivery are fully detailed under the head of Mania, page 502, which see.

INVERSIO UTERI.

This complaint consists in the inversion of the cavity of the uterus, so that the fundus comes through the os uteri, consequently that part which was formerly the inside of a cavity becomes now the outside of a tumour, either in or projecting from the vagina. It most commonly is the consequence of mismanagement of the placenta, by the midwife or accoucheur being in too great a hurry to extract it.

Its immediate effects are hæmorrhage, faintness, and a sense of fulness in the vagina.

When early discovered, the uterus may easily be reduced to its natural situation. If the placenta be adhering to the womb, the latter should be reduced before any separation of the former be attempted, to prevent hæmorrhage.

PROCIDENTIA UTERI.

This complaint consists (as the name implies) in a change of the situation of the womb, by which this organ falls much lower than it ought to do. In some cases it absolutely protrudes entirely without the vagina. The slighter cases are therefore named a bearing down, and the more violent ones a descent or falling down of the uterus. The complaint is met with in women of every rank and age; but more frequently in those who have had several children than in such as have not had any.

Every disease which induces general debility, or local weakness in the passage leading to the womb in particular, may lay the foundation of this complaint; hence immoderate venery, frequent miscarriages, improper treatment during labour, and too early or a long-continued erect posture of the body soon after delivery, and in some cases after abortion, are in married women the most common causes of procidentia uteri. At this time the womb weighs eight or ten times more than when unimpregnated, and descends by its gravity. In the unmarried it is apt to take place in consequence of violent exercise, such as jumping, dancing, riding, lifting heavy weights, &c. while out of order.

The proximate or immediate cause of prolapsus uteri is relaxation of the broad and round ligaments above, and want of tone in the vagina below.

The disease comes on generally with an uneasy sensation in the loins whilst standing or walking, accompanied now and then with a kind of pressure and bearing down, as also pains in the groins extending to the labia. There is a sense of fulness in the parts, and probably an increased discharge of transparent mucus from the vagina. All the symptoms are relieved by a recumbent position. In procidentia uteri the symptoms arising from the uterogastric sympathy are in many cases very distressing; the appetite fails, the stomach and bowels lose their tone, flatulence and borborigmi are troublesome, considerable debility ensues, the spirits are depressed, employment and exercise become irksome, and life at last is scarcely desirable. The discharge varies much at times, the menstrual flow usually is increased, and menorrhagia not unfrequently attends. Before the external protrusion of the tumour, the discharge is greater than afterwards, because the surface of the vagina ceases to secrete when permanently exposed to the air. After a time, patches of healthy looking ulceration attack the exposed vaginal surface, but seldom go deep; and the os uteri is not unfrequently assailed by one of these.

By neglecting to pay proper attention to the early symptoms and threatenings of the disease, the woman becomes at length incapable of making water without first lying down or pushing up the swelling which seems to impede the discharge of urine; and if the complaint continues to increase, the womb is actually forced out of the parts, and takes on the form of a bulky substance hanging down between the thighs. This severe degree of the disorder seldom occurs, however, among women in northern climates, except in those who have had many children, and are at the same time of a relaxed and feeble frame; but in warm climates it is very frequently to be met with, and particularly in negroes and mulattoes, among whom I often observed the protruded parts considerably ulcerated, and occasioned, no doubt, by external irritation and a neglect of cleanliness.

Although procidentia uteri is a local disease, it is frequently productive of several distressing symptoms which undermine the

constitution. These principally arise from the disturbed functions of the stomach and bowels, and an impaired condition of the nervous system.

In its early stages, if conception should take place, a confinement for some weeks in a recumbent position on a sofa or bed will often enable the parts to regain their tone, so as to render subsequent artificial assistance unnecessary. Where pregnancy does not exist we must have recourse to art. If the disease is of long standing, it may be difficult to effect a cure.

In the treatment of procidentia uteri, the curative intentions are to increase the tone of the relaxed parts, both topically and through the constitution, and to support the tumour: topically by cold and by astringents. Cold water ought to be applied to the parts of generation, as also to the belly and back, by means of a large sponge, three or four times a day, the water being as cool as possible. Cold water may also be thrown into the vagina as frequently by means of a syringe. In very slight cases, these means, assisted by an horizontal position, may be sufficient; but in cases of some standing, astringent washes should be substituted for simple water. Alum combined with zinci sulphas dissolved in a decoction or infusion of some vegetable astringent, such as thea viridis, petala rosæ rubræ, cortex quercus, cortex granati, gallæ, &c., will make an appropriate injection, various formulæ of which are given under the head of Leucorrhœa and Gonorrhœa Simplex, as also below.*

In aid of topical applications tonics must be administered internally, especially the bitter tonics, as gentian, calumba, &c., with cinchona and sulphuric acid: for various formulæ of these, see Dyspepsia.

A due attention must be paid at the same time to the state of the bowels, and this be nicely regulated: the extreme of constipation and diarrhœa being equally injurious. Aperients of the mildest nature, when requisite, are therefore only to be employed. The bladder should never be suffered to contain a large quantity of urine. When the stomach is not previously much weakened, the use of a cold bath may prove a valuable auxiliary to the other means; and a salt water bath will be preferable to one of fresh water.

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* 1. ℞ Cort. Querc. f. ℥ij.
Aq. Puræ, Oij.
Coque ad dimidium, et colaturæ adde
Aluminis, ℥jss.
Zinci Sulphat. ℥ss. M.
ft. Injectio.
Vel,
2. ℞ Aluminis, ℈iv.
Plumbi Acet. ℈ss.
Aq. Rosæ, f. ℥x. M.
ft. Injectio.

* 1. Take Oak Bark, two ounces.
Pure Water, two pints.
Boil it down to one pint, and to the strained liquor add
Alum, one drachm and a half.
Sulphate of Zinc, half a drachm.
Mix them for an injection.
Or,
2. Take Alum, four scruples.
Acetate of Lead, half a scruple.
Rose Water, ten ounces.
Mix them for an injection.

In every case of procidentia uteri, the recumbent posture on a sofa or hard mattress as much as possible ought to be enjoined, keeping the room at the same time as cool as may be consistent with the patient's feelings. The diet should be generous and nutritive, and a moderate quantity of wine be allowed. As exercises, swinging in a cot or hammock, and riding in an easy carriage, will be most appropriate.

If the disease resists these remedies, or it shall appear from the first unnecessary to employ them from any idea of their inefficacy, the only relief that can then be afforded, unless the woman becomes pregnant, is to be obtained by wearing a pessary. This is usually made either of wood or ivory, and if properly adapted to the passage and of a fit construction, may be worn without much inconvenience or any pain. Whenever such an instrument is used, certain attentions will, however, be necessary. Thus, the pessary should never be allowed to remain in the passage above a few days at a time, otherwise it may become the source of some irritation. It ought, therefore, to be withdrawn occasionally on going to bed, be well cleaned, lest the secreted matter attached to it become acrimonious, and be reintroduced in the morning before the patient quits her bed.

Pessaries are always either circular or oval; the former can only be used where the disease has not made much progress, and when the tone of the vagina is not much impaired. It will seldom be safe to introduce a circular pessary, the diameter of which exceeds two inches and a half; it should be large enough however to keep the situation in which it is placed, else it will slip away; but it should not be of such a size as to incommode the woman or to injure the parts by its pressure. Occasionally the pessary should be changed for one of a smaller size, as the vagina recovers its proper tone. The oval pessary rests with its longest diameter across the vagina, neither interfering with the rectum nor urinary passages. It seems best adapted for those cases in which the tone of the vagina is so much diminished as to require a large support. Its longest diameter ought not to exceed three inches and three quarters.* All pessaries ought to be introduced with great care, and be placed as high up in the vagina as possible.

Before any attempt is made in the reduction of prolapsus uteri, it will first be necessary to empty the bladder and rectum: this being done, let the patient be so placed as that the pelvis shall be much higher than the shoulders. The practitioner is then to apply his fingers and thumb to the lower part of the tumour where the os uteri is situated, and by a gentle and gradual pressure this is to be carried up into the centre of the tumour itself. The pressure is afterwards to be continued until the parts are returned into their proper place. A pessary is then to be introduced, and the patient to be enjoined to remain in a recumbent posture for several hours.

* See Observations on the Diseases of Females, by Charles M. Clarke.

Where a woman who is liable to prolapsus uteri becomes pregnant, there will be no occasion for the pessary after the third month, and by proper treatment after delivery, a return of the complaint may probably be prevented.

In married women, whilst there remains a possibility of pregnancy, the hope of a radical cure continues, because the processes to which the vagina and parts connected with it are subjected after parturition, often produce a permanent reduction of the tumour. In these cases the principal remedies therefore are pessaries. But the complaint frequently remains after the period of menstruation is over, and when all likelihood of a radical cure is done away. In cases of this nature, Dr. Hamilton of Edinburgh has attempted, by exciting artificial inflammation of the vagina, to procure an adhesion of its sides, and thus to form what he terms a fleshy pessary. Unhappily Dr. Hamilton failed in the experiment which he made for this purpose.

A powerful stimulant is certainly required to produce in the vagina and other canals lined with a mucous membrane, that kind of inflammation which forms coagulable lymph; for in these parts a slight degree of inflammation occasions pus to be poured forth, but a greater is demanded for the formation of lymph, exactly the contrary to what occurs in most other parts of the animal body. Mr. John Hunter says,* that he produced adhesive inflammation in the vagina of an ass, by injecting a strong solution of the oxymuriate of mercury. The remedy would by no means, however, be advisable in a woman.

DISEASES OF INFANTS.

Much attention and experience are required to treat the diseases of infants judiciously; close and repeated observation being the principal means of supplying the want of that kind of assistance which the personal information of adult patients generally affords. The disorders of early infancy are, however, more obvious than has been generally supposed; their number is comparatively small, their causes are uniform, and the treatment of most of them is simple and pretty certain.

Improper food, confined and unwholesome air, the want of due exercise and cleanliness, difficult dentition, and unhealthiness of the parents, are the most general causes of the diseases of infants. Others have indeed been enumerated both by ancient and modern writers, such as their general laxity, the greater irritability of their nervous system, and the delicacy of their muscular fibres, which may indeed be considered as so many predisposing causes.

The symptoms of the first diseases of infants (by which we also judge of their nature) are chiefly retention and excretion, sour

* See his Treatise on the Blood, p. 240.

belchings, sickness, vomiting, purgings, inquietude, crying, wakefulness, heaviness, loathing of the food, contractions and sharpness of the features, blueness about the mouth, turning up of the eyes, sudden startings from sleep, thirst, heat, the manner of breathing and of crying, retraction of the lower extremities, hardness and distention of the belly, and pustules or eruptions, external or internal. To these may be added the openness or firmness of the fontanelles and of the sutures, the strength and figure of the bones, and the relaxation or contraction of the skin in general, and of the scrotum in particular. The pulse and urine are less certain marks, in the greater number of their complaints, than they are in older children and adults.

Having thus briefly noticed the causes and symptoms of infantile diseases in general, I shall proceed to consider each separately. Small-pox, chicken-pox, measles, scarlatina, and such other eruptive diseases, together with croup, hydrocephalus, ophthalmia, hooping-cough, scrofula, rickets, tinea capitis, worms, and a great many other diseases, being equally liable to attack children of a maturer age, have already been noticed in the preceding pages of this work, in the class and order to which each belongs.—See the Index and Systematic Arrangement.

As it is always more desirable, as far as we are able, to prevent diseases rather than to cure them, and to obviate the causes rather than to remove their effects, I beg leave, previous to my entering on the treatment of infantile diseases, to offer a few observations on the diet and proper management of young children.

During the first months of a child's life, the milk of its mother is unquestionably preferable to every other kind of nourishment, and even to the milk of another woman, provided the parent is in good health, and labours under no malformation of the nipples, or constitutional imperfection of importance. As, however, it is usually more convenient, and at times absolutely necessary, to bring up the child partly by the hand, as it is called, at the same time that it sucks, we should be careful to regulate the diet both with regard to quality and quantity, that its stomach may neither be disordered with what is improper nor be oppressed with excess. The food which is prepared by art should be thin and liquid, and be made fresh every day. It is to be offered to the infant frequently by little at a time, and at proper intervals, and not to be crammed down its throat as often as it awakes from sleep, or cries, as is the custom with many nurses. Instead of a spoon, a horn or glass bottle covered with parchment, and perforated so as to imitate a nipple, may be used. This gives occasion to some little exertion in sucking, imitative of what we see in nature, and is moreover attended with the advantage, that the infant will not be gorged or induced to take more than it really wants.

At first it will be sufficient to give infants occasionally, along with the breast, a little milk and water warmed to the temperature of the mother's milk, with a very small proportion of sugar; or we

may substitute thin gruel made from pearl barley, grits, rice, or arrow-root, mixed with about a third of cow's milk, which may occasionally be changed for thin pap made with bread or biscuit, with a due proportion of fresh milk; but all these should first be passed through a lawn sieve, to insure their being thin and smooth.

At the end of five or six months the diet may be made a little stronger, consisting of plain mutton or chicken-broth, clear and free from fat, or beef-tea, and occasionally some light pudding may be allowed. About the eighth or ninth month a small portion of animal food may be given, particularly if nature has pointed out its propriety by early dentition. The animal food given to young children should be plainly roasted or boiled, hot or cold: fried and boiled meat, and what is heated a second time by hashing or mincing, being less digestible, ought to be avoided.

If teething commences soon and goes on well, the infant may be weaned at about nine months old; but if dentition is late, or accompanied with much irritation, it may continue at the breast for a whole year, provided the health of the mother will admit of it, or that she is not again pregnant. When the child is weaned, any kind of light plain animal food may be allowed it once a day, with a due proportion of vegetables, consisting principally of the farinacea, as flour, rice, sago, &c.

From a mistaken expectation of strengthening weakly children, some people give them animal food twice or thrice a day, but this is injudicious. The most proper drink for children will be plain water.

The practice of swathing infants with bandages is now judiciously laid aside; and deformity, as a consequence of dressing or clothing children improperly, is rarely to be met with. The rule to be observed with respect to the article of dress, ought to be, that a child have no more clothes than are necessary to keep it warm; that they sit easy and loose on its body: and that they be changed frequently, especially when they happen to be wetted. Dirty clothes not only gall and fret the tender skin of infants, but likewise give them an unpleasant smell, and are apt to produce cutaneous disorders, if not vermin; whereas cleanliness, assisted by gentle friction with the hand over every part of the body morning and night, together with proper ablutions with tepid or even cold water, tends greatly to preserve the health of children, and promotes perspiration.

In dressing the infant, if the nurse observes the skin any where chafed, after washing the parts and drying them well, let her apply a little common hair powder to it by means of a puff; but if much galled, which will sometimes happen at the time of teething, particularly in very fat children, from the heat and sharpness of the urine, let her bathe them with a wash composed of two parts of common water and one of rectified spirit, and afterwards sprinkle them with a little calamine or Fuller's earth, powdered very fine.

When cutaneous eruptions appear during dentition, no repellent application should be employed.

A young child should be amused through the day, and not suffered to sleep much during that time, that it may get the more rest by night. The curtains of its bed should not be drawn closely round, that it may breathe free and easily. It should be early accustomed to be much in the open air, for vigour of the body conduces to that of the mind; and as it is incapable of any exercise of itself, it should be the business of its nurse or other attendant to toss it well about in her arms from time to time. If the season of the year will admit of it, bathing the child frequently in cold water will very much tend to strengthen and invigorate it.

The chamber which is appropriated for the nursery should be roomy, and it ought to be kept remarkably clean, sweet, and properly ventilated.

ASPHYXIA.

The apparent cessation of life in new-born infants may be owing to various causes, such as universal weakness of the vital powers, collections of glairy matter in the vesicles of the lungs, the introduction of a quantity of the liquor amnii into the trachea, and a congestion of blood in the lungs, arising either from the neck of the child being tightly encircled by the os uteri or navel-string, or from the head being long detained in the passage. Asphyxia sometimes takes place also, in consequence of a portion of the funis protruding through the os uteri during labour, by which means the circulation through the chord is completely interrupted.

When universal weakness of the vital powers seems to be the cause of asphyxia, we must be cautious not to suffer any effusion of blood from the umbilical chord. The communication between the child and the mother should be kept up as long as possible; for which reason we should avoid any violent pullings at the chord, that the placenta may not be too soon detached; and we should likewise not be in a hurry to apply a ligature.

It not unfrequently happens, after a tedious labour, or where a portion of the funis has protruded through the os uteri during labour, so as completely to interrupt the circulation through the chord, that the child is so weak and faint as to show little or no signs of life. In such cases, after cleansing it and wrapping it in flannel, we should stimulate its temples and nostrils with spirits of hartshorn, and rub its chest with brandy. If these means fail to excite the languid circulation, we should then introduce a pipe or catheter into its mouth, and thereby endeavour to inflate the lungs; pressing the thyroid cartilage at the same time to prevent the air from passing down the œsophagus, which plan ought to be pursued for a considerable length of time, as there is great reason to suppose that many children might be saved were we to adopt the means which have been pointed out, and continue them long

enough. Stimulating the intestinal muscles to contraction, by pouring cold water on the child's thorax, so that air may rush in by the glottis, may likewise be tried. Besides inflating the lungs and pursuing the other steps which have been mentioned, care should be taken that the child does not lose its heat; for which reason it will be advisable to put it into a bath of warm water; and while this is preparing, it may be enveloped in warm flannel.

From what has been observed on galvanism under the head of Suspended Animation in consequence of Drowning, it is probable that this remedy might prove a valuable auxiliary in many cases of asphyxia.

Where a portion of the liquor amnii gets into the trachea and produces asphyxia, or the mouth of the infant is discovered to be filled with a glairy matter, rendering the respiration difficult, sonorous, and rattling, we must not only rinse the throat of the child, but likewise place it in an attitude which will facilitate the discharge of the liquor. Having done this, we should endeavour to re-animate the infant, by inflating the lungs, and then pressing out the air, imitating in this way, for a considerable length of time, natural respiration.

If a congestion of blood in the lungs, from the causes before mentioned, has occasioned the suspension of life, the most proper step to be pursued will be, to suffer a small quantity of blood to be lost from the end of the divided chord.

The same will be advisable after a tedious labour, where there is much stupor present, in order to lessen the determination of blood to the head.

Professional men being often called upon to give evidence before a court of judicature in cases of supposed infanticide, it seems right to mention, that much careful observation is required to discriminate between a child that is still-born, and one that has lived only a short space of time after its birth. Various appearances also, both internal and external, may be mistaken for marks of violent death. Even the swimming of the lungs in water, a test on which much reliance has been placed, is on many occasions found to be fallacious; for they will float in consequence of a putrefactive process having commenced, as well as when filled with air by respiration.

A woman suffering the pains of labour, may have the fœtus escape from her and fall to the ground on its head whilst she is resting on her knees and elbows, or standing on her feet, so as that the child shall be destroyed unintentionally. It should also be understood, that an infant, even at the full time of utro-gestation, may escape from a woman into a privy, or any such-like place during her exertions to evacuate the contents of the intestines, and this may happen without her intending to destroy it. Such cases beyond doubt do sometimes occur.

It may likewise happen, that an unmarried woman, on coming to her full time, and having concealed her condition, may be taken ill

when by herself, and be delivered of a live child: but that either from syncope ensuing speedily, or her being suddenly deprived of reason from a distracted state of mind, owing to a sense of the shame which will attach to her foible, she may be so overcome as to be rendered incapable of assisting the infant, whereby it may suffer suffocation under the bed-clothes, or be otherwise so injured as only to make a few inspirations. In other instances it may happen, that although the child is born alive, still, from its universal weakness, the want of due assistance, the circulation of blood between the mother and child being so interrupted either from undue pressure in its passage, or the umbilical chord being twisted round its neck in various convolutions so as to produce congestion in some organ important to life, or from hæmorrhage from the umbilical chord, when no ligature has been applied to it; or from some other cause, it may soon cease to breathe, without receiving any intentional injury from its mother. No doubt occurrences of this nature do sometimes take place; and they clearly point out the impropriety of placing any reliance on the floating of the lungs in water, as a test of infanticide.

The floating of the lungs of a new-born infant, where no putridity exists, incontestably proves that it has breathed; but, although this is the case, the presumption that the mother has *intentionally* destroyed it, is by no means satisfactory or clear.

Justice undoubtedly requires from every medical practitioner, that his evidence before a coroner or jury should be regulated by truth; but humanity and mercy dictate to him, that he ought to have the fullest assurances of guilt, before he gives an opinion that may deprive a fellow-creature of life. On all such occasions he should recall to mind the holy text which tells us, it were better that many guilty escape punishment, than that one innocent suffer. Those who wish to make themselves well acquainted with medical jurisprudence, so as to acquit themselves with credit and eclat, when called upon to give evidence before a coroner or court of justice, in cases of supposed infanticide, had better previously consult and read the works of Dr. J. Gordon Smith, Dr. Male, and Dr. Paris and Fonblanque.

A pleasing writer* informs us, that at Copenhagen there is an hospital for the reception of pregnant women who have reasons for seeking concealment. They are received into it upon paying a small stipend; they enter at night in masks, and are never seen but by those who are necessary to their comfort, and even their names are not required. Since the establishment of this noble and humane institution, he gives us to understand that there has been a very visible diminution in the crime of infanticide.

Much, indeed, it is to be regretted, that no asylum on a similar plan is to be found by unfortunate females in our United Kingdom; and that so many of them annually suffer an ignominious

* See Carr's Summer Northern Tour.

death, for laying violent hands on their offspring in the moments of shame, anguish, and despair.

THE BLACK OR LIVID COLOUR OF INFANTS.

It sometimes happens, that immediately after birth the face and neck of the infant put on a livid or black appearance, the lips become purple, and the breathing short; which symptoms either go off soon again, or terminate in death.

They are to be attributed either to an imperfect closure of the foramen ovale, or some malformation of the heart or lungs; or to the vessels having imperfectly undergone those changes which are necessary for all animals who breathe common air.

I know of no remedy likely to obviate these appearances.

In an Appendix* to the fourth edition of the Modern Practice of Physic, published at New-York, Dr. David Hosack, an eminent professor of the University of that State, and to whom I have now dedicated this work, as a testimony of the high opinion I entertain of his abilities both as a practical physician and teacher of medicine, has recorded two cases of this disease which were successfully treated by him.

In the first, he had in vain tried evacuations, and afterwards anodyne medicines, upon the principle of the disease being of a spasmodic nature. He then had recourse to a stimulant mode of treatment, the remedies not having been attended with any relief or advantage. A blister was applied upon the breast, two others behind the ears, cataplasms of mustard, ryemeal, and vinegar, were put to the soles of the feet, the whole body was bathed with warm brandy, and afterwards with a diluted solution of ammonia; and from time to time an attempt was made to give the child a spoonful of wine whey; but all these means produced no beneficial effects. After six hours had elapsed it became more feeble, respiration was suspended for a greater length of time than in the commencement of the disease, and the circulation became less vigorous: these, with greater coldness of the extremities, excited great alarm.

It appears that Dr. Hosack had frequently employed, in the latter stages of malignant fevers and diseases of great debility, a stimulating bath, prepared with the bark of cinchona and spirits; and as a last resource he determined to give it a trial in the present case. He therefore directed four ounces of this bark in powder to be boiled for a few minutes, in about two gallons of water; to this, when fit for use, a pint of Jamaica spirit was added. When it was cooled to a temperature rather above that of the body, the child was immersed in it up to its neck; and to render the bath more stimulating, a small quantity of the diluted solution of ammonia was added from time to time.

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* See page 910.

A very apparent and favourable change took place in a short time; respiration was perfectly restored while the child remained in the bath; the circulation became vigorous and active, the countenance resumed its lively hue, the power of swallowing (which had been lost) was restored, and in every respect the child manifested symptoms of relief. It was now removed from the bath, wrapped up in warm dry flannels, and put to the breast. This it took with eagerness, and it remained composed and free from complaints for about half an hour, at which time a fresh paroxysm came on. The bath was employed a second time, and repeated during one or two other paroxysms with the same relief as before. These, however, were of shorter duration, and returned after long intervals. The child at length recovered, and was restored to perfect health.

In the second case, when Dr. Hosack visited the child, its respiration was completely suspended, the face of a dark bluish colour, the circulation weak, and very irregular, and the extremities were almost cold; he instantly directed a bath to be prepared in the same manner as noticed in the first case, and when ready the child was immersed in it for about fifteen minutes; its respiration soon became regular. In about half an hour's time the fit returned, but was of short continuance and less violent: the bath was employed a second time, which completely removed all complaint.

A RETENTION OF THE MECONIUM.

A DARK-COLOURED viscid matter, known by the name of meconium, is contained in the bowels of all infants at their birth, and is usually discharged during the two or three first days, in consequence of the milk of the mother, which is first secreted, being somewhat of an aperient nature.

In general this will be sufficient to bring off the meconium; but where it fails to do so in the course of a day or so, the aid of medicine may be necessary, and the best we can employ is about two drachms of the oleum ricini. Some give a solution of manna in water, or equal parts of oil of almonds and syrup. If these do not act readily, a clyster of thin gruel, with a little olive oil and common salt, may be thrown up into the intestines.

The custom of drenching children with some drug or other the moment they are born, whether requisite or not, with the view of carrying off the meconium, is highly reprehensible; for, in most cases, the milk of the mother will of itself be amply sufficient.

THE YELLOW GUM, OR ICTERUS INFANTUM.

THIS is a species of jaundice which affects many children at or soon after their birth, and which usually continues for some days.

It has generally been supposed to arise from an obstruction of

the biliary ducts forcing the bile back upon the liver, from the meconium impacted in the intestines, or from mucus or viscid matter clogging the ductus communis.

The effects produced by it are, languor, indolence, a yellow tinge of the skin, bilious urine, and a tendency to sleep, which is sometimes fatal where the child is prevented from sucking.

For the most part the disease is easily removed by clearing the intestines by some mild laxative, such as the oleum ricini, where the mother's milk does not of itself prove sufficiently aperient.

The disease, in some instances, has been supposed to proceed from a viscid matter obstructing the gall-ducts. In these it may be necessary to give a gentle emetic, consisting of a few drops of the tartarized solution of antimony, and on the succeeding day we may administer four or five grains of rhubarb. Should the yellowness continue after these means have been adopted, the emetic as well as the opening medicine may be repeated in the course of a few days. Dr. Underwood mentions that in those cases where an emetic has been objected to, and the attention devoted wholly to keeping the belly open, the yellowness not unfrequently will continue to the end of the month, accompanied with languor and other symptoms of debility.

We now and then meet with instances where infants are affected with the true jaundice, distinguished by the skin being every where discoloured, as well as the whites of the eyes. Sometimes this appearance is of little importance, scarcely requiring any particular medical aid, and disappearing spontaneously; but in other cases the infant appears to suffer much. In these, besides employing daily frictions to the stomach and belly as well as a warm bath, we should administer saponaceous and other medicines, as advised under the head of Jaundice.—(See this Disease.)

EXCORIATIONS AND ULCERATIONS.

From a neglect of proper cleanliness, children are very apt to become chafed in the wrinkles of the neck, behind the ears, and in the groins.

To remedy occurrences of this nature it will be proper to bathe the excoriated parts twice or thrice a day with a little warm milk and water, and afterwards to sprinkle them with some absorbent powder, such as tutty or calamine, laying over all a bit of scorched linen rag. Where the excoriation is very considerable, a wash composed of two parts of rectified spirit and one of common water may be used. A little of the ceratum plumbi superacetatis spread upon fine lint may be employed as a dressing. In obviating excoriations, we are however to be cautious in drying up discharges behind the ears in infants, as very bad consequences have been observed to ensue from making use of repellent applications in such cases.

In some children of a gross habit of body, and particularly about the time of teething, a species of excoriation extending low down

in the neck is apt to take place, which at length degenerates into large deep sores, and not unfrequently has terminated in gangrene. Here fomentations of cinchona will be necessary, and we should at the same time administer its powder internally. Cases of this nature do not occur, however, very frequently.

When ulcerations ensue, and they are large and painful, fomentations of poppy-heads boiled in milk will be likely to prove beneficial. Should they show no disposition to heal after such treatment, some mercurial application* may be made use of, and this may be laid on morning and evening spread on a bit of soft linen or fine lint. Where alteratives are thought necessary, small doses of the submuriate of mercury with the testacea may be given internally.

HICCUPS.

Some infants are much incommoded by hiccups; and they arise probably either from acidity in the stomach, or from some nervous irritation.

In the former case, a powder composed of a little prepared chalk and rhubarb (about eight grains of the former with two or three of the latter) may prove beneficial. In the latter, it may be proper to give a few drops of the spiritus ammoniæ aromaticus, or the tinctura camphoræ comp. In some instances, a little plain vinegar has proved an effectual remedy. Where the complaint is severe, or returns frequently, it may be advisable to rub the stomach with soap liniment, to which a little tincture of opium has been added.

INFANTILE ERYSIPELAS.

This is a very dangerous species of the spurious or erysipelatous inflammation, which is not often met with, however, but in lying-in hospitals. The ordinary time of its attack being a few days after birth, it was, at the first of its being observed, thought never to appear later than the month; but this has since been found not to be the case. It seizes the most robust as well as delicate children, and in a very sudden manner; the progress is rapid; the skin turns of a purplish hue, and soon becomes much hardened.

The milder species appears often on the fingers and hands, or the feet and ankles, and sometimes upon or near the joints, forming matter in a very short time. The more violent kind is gene-

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* 1. ℞ Hydrargyri Submuriat. ʒj.
Unguent. Sambuci, ℥j. M.
Vel,
2. ℞ Hydrargyr. Præcip. Alb. ʒss.
Unguent. Cetacei, ℥ss. M.

* 1. Take Submuriate of Mercury, one drachm.
Elder Flower Ointment, 1 ounce.
Mix them for use as an ointment.
Or,
2. Take White Precipitated Mercury, half a drachm.
Spermaceti Ointment, half an ounce.
Mix them.

rally seated about the pubes, and extends upwards on the belly, and down the thighs and legs, though sometimes it begins in the neck, and is equally fatal. It seems indeed to be always less dangerous when confined to the extremities, than where it seizes on, or spreads to any other part of the body. The swelling is but moderate; but after becoming hard, the parts turn purple or livid, and very often sphacelate, especially in boys, when it falls on the scrotum; the penis swells, and the prepuce puts on that kind of emphysematous appearance, which it has been observed to do when a stone sticks in the passage, or in the anasarca of the scrotum.

The disease often proves fatal in a few days.

Dissections of such children as have been destroyed by this disease have frequently discovered the contents of the abdomen glued together, and their surface covered with an inflammatory exudation, exactly similar to that found in women who have died of puerperal fever and peritoneal inflammation. In males, the tunicæ vaginales have been sometimes filled with matter, which has evidently made its way from the cavity of the abdomen, and accounts for the appearances of the organs of generation just now described. In females, the labia pudendi are affected in like manner; the pus having forced a passage through the abdominal rings.

As in all cases the appearances to be observed on examination of the bodies of children who have sunk under the disease clearly demonstrate that it is truly inflammatory in its first stage, it appears rational to adopt the depleting plan within the first twenty hours. The bowels ought therefore to be freely acted upon by purgatives, after which leeches may be applied to the abdomen, if the skin thereof is not affected with inflammatory redness.

We are informed by Dr. Underwood,* who since the days of Haller† seems to be the only physician that has distinctly noticed this complaint, that various means were made use of at the British Lying-in Hospital without success; though the progress of the inflammation seemed to be checked for a while by saturnine lotions and poultices, applied on the first appearance of the inflammation; but it soon spread, and a gangrene presently came on; or where matter had been formed, the tender infant sunk under the discharge.

On a further acquaintance with the disease, linen compresses wrung out of camphorated spirit, were applied in place of the liquor plumbi acetatis, which we are given to understand have proved more successful in checking the inflammation in several instances. After the cinchona mixed with a little aromatic confection was made trial of internally, it appears that several children

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* See his Treatise on the Diseases of Children, page 33, vol. i.
† See his Chapter de Febre Erysipelacea.

recovered. The cinchona ought therefore to be given as soon as possible either by the mouth or thrown up in a clyster, and we may add a little confectio aromatica to it.

Dr. Underwood observes, that in a few instances the disease has been attended with some varieties; for infants have not only come into the world with several hard and sublivid inflammatory patches and ichorous vesications about the belly and thighs, but with other spots already actually in a state of mortification. A large eschar has soon spread upon the spine of the tibia, with smaller ones about other parts of the legs, and on several of the toes and fingers. In such cases particularly, he says, the bark of cinchona and cordials must be exhibited liberally, and the inflamed and mortified parts be well fomented, and dressed with warm applications.

CUTANEOUS ERUPTIONS.

Children at the breast are very subject to slight eruptions, particularly during the first month; and these serve, no doubt, to relieve the body of some acrimonious humour. Of this kind is the red-gum, which consists in an efflorescence or small red spots, most usually confined to the face and neck, but in some cases extending to the hands and legs, and even over the whole body, appearing in large patches, and sometimes raised considerably above its surface. Now and then it shows itself in the form of small pustules, which are filled with a limpid, or sometimes a purulent or yellow fluid.

Every species of this eruption has generally been attributed to a predominant acid, but ought rather to be regarded as an exertion of nature to throw off something hurtful.

All that is generally necessary in this complaint, is to give a little magnesia, or testaceous powder, according to the state of the bowels, and to keep the child moderately warm; otherwise by the rash striking in, the acrimonious humour will fall on the first passages, and be succeeded by sickness and purging, till perhaps the eruption appears again on the skin. In cases of nausea at the stomach, or any disposition to fits upon this eruption being repelled, some light cordial, such as a few drops of the spiritus ammoniæ aromaticus, may be given twice or thrice a day, and the child's feet, or perhaps the whole body, be put into warm water. The state of the skin and bowels has a peculiar consent; and on this account infants whose first passages have been frequently disordered, are always benefited by eruptions on the skin. In such, peculiar care is therefore necessary to guard against their being repelled, as well as to invite their return.

Another species of eruption which is frequently to be met with in young children, is that to which medical writers have given the name of crusta lactea, or lactumen. This often puts on a very unpleasant appearance, but is nevertheless of an innocent nature, and it has been observed that those children who have been much loaded with it have usually been healthy, and have cut their teeth

easily. A remarkable circumstance attending this eruption, is, that however thick and long-continued the scabs may be, the crusta lactea never excoriates, nor leaves any scar on the parts.

The crusta lactea appears first on the forehead, and sometimes on the scalp; and then often extends half way over the face in the form of large loose scabs, which, as the disorder increases, appear not very unlike the small-pox pustules after they have become dry. It begins with white vesicles larger than the itch, which soon become of a dark colour and then scab, with an efflux of ichor and great itching of the parts affected.

The rash generally disappears of itself when the child has cut three or four teeth, though it may sometimes continue for several months, and in a few instances even for years. In such cases, testaceous powders, the submuriate of mercury, and other alteratives, have usually been administered, but in general without success. The Harrowgate or other sulphureous waters might probably have a good effect. In very bad cases, a blister might prove serviceable.

During early dentition a rash very much resembling the measles is apt to make its appearance, and this usually continues very florid for three or four days, but it does not dry off in the manner of that disease. It is often preceded by nausea and vomiting, but is attended with little or no fever. During the continuance of the eruption, a few doses of the testaceous powders, with the addition of a little of the nitrate of potass, will be the most proper medicines; and when it disappears, some gentle laxative may be advisable.

Other rashes in which the spots are larger and often attended with some degree of fever (occasioned probably by the irritation of teething) are frequently to be observed during a more advanced stage of dentition, particularly while the double and eye-teeth are cutting. These require only a proper attention to be paid to the state of the bowels, unless the fever is considerable; in which case we should pursue the steps recommended under the head of Dentition.

A slight species of essera or nettle-rash is another eruptive disease to which infants are liable; but this requires in general little attention, and often disappears in a few hours. When the body is much covered with eruptions, and they remain long out, attention should be paid to their not being repelled suddenly by any exposure to cold, or by any other improper treatment; but should they happen to strike in, we may then have recourse to the tepid bath and light cordials, in order to solicit their return to the surface of the body, which will be of the greatest consequence should the child suffer much from the repulsion.

An eruption very much resembling the itch is sometimes to be met with in infants at the breast; as likewise in children who have cut all their first teeth. It usually begins about the arms and thighs, but always spreads soon afterwards to the other parts, and

not unfrequently extends from the head to the feet. In some places it appears in very small eruptions like the points of pins, with watery heads; and in others, in as large ones as peas; and sometimes in foul blotches, which, after breaking, form sores and broad ugly scabs. These die away, and similar ones show themselves successively in other parts, sometimes for two or three months, leaving the skin of a dirty hue.

The external application of an ointment consisting of the unguentum sulphuris with a small proportion of the unguentum hydrargyri nitratis, will seldom fail to remove the complaint, if assisted at the same time with the internal exhibition of the hydrargyrum cum creta or hydrargyri sulphuretum nigrum. Washing the parts affected with about two drachms of the liquor potassæ mixed with a pint of water, will often afford much temporary relief.

In all the eruptive complaints of infants, their taking cold ought carefully to be guarded against, and the belly should be kept open. If the child is sick at the stomach, a little magnesia or testaceous powder with a small addition of the pulvis contrajervæ compositus may be given now and then. Should the eruptions strike in suddenly, every means should be used to reproduce them again on the surface of the body. Repellent applications should never be employed when eruptions appear during dentition.

In consequence of some bad quality in the milk of the person who nurses the child, it sometimes happens that an eruption comes out on different parts of its body. In all such cases the nurse should be changed. Constipation should likewise be obviated, and some gentle absorbent medicine be given once or twice a day.

ACIDITIES, GRIPES, AND FLATULENCY.

Costiveness, improper or too much food, bad milk, weak digestion, and that natural tendency there is in the stomach of all children to generate acidity, are the causes which give rise to these affections.

When the food becomes acid on the stomach, instead of being properly concocted and converted into chyle and blood, it is likely to give rise to continual crying, restlessness, drawing up of the legs forcibly to the body, hiccups, vomiting, diarrhœa, flatulency, sour eructations, griping pains, green stools, and a depression of strength; and where the irritation is very considerable, convulsions are apt to ensue.

If acidity prevails in a high degree, and the infant is troubled with sour belchings and much irritability at the stomach, it may be advisable to evacuate its contents by a weak solution of tartarized antimony, given in the quantity of one or two tea-spoonsful every quarter of an hour, until a sufficient effect has been procured; after which, a few grains of rhubarb and magnesia may be ordered, to carry off the remaining offending matter.

To prevent any fresh accumulation of the same nature, it will be proper to give, as circumstances may seem to require, a little of the mistura cretæ, but more particularly where any severe degree of purging attends. Together with these or other remedies, exercise, and frictions of the body, but of the abdomen in particular, should not be forgotten.

Acidities and flatulency sometimes prevail in so high a degree as to occasion severe griping pains, perfectly obvious by the infant's screaming, crying, and drawing its knees up to the belly, with the presence of abdominal tension. In such cases it will be necessary to dislodge the contents of the intestines, should costiveness prevail, by some gentle laxative; after which we may administer absorbents* and carminatives, the last of which we may give in a clyster† as well as by the mouth; and where the pains seem very acute, and by no means relieved, we may make a small addition of opium. As opiates do not however agree well with children, they should not be resorted to on trivial occasions. Besides adopting these steps, it will be proper to apply warmth externally to the stomach and bowels by means of heated bran or chamomile flowers put into a soft flannel bag, which probably will greatly assist in abating the pain.

Children that are partly brought up with the spoon, and who are very subject to flatulency, should always have a few carraway seeds boiled up with their food.

As acidities, gripes, and flatulency, seem frequently to originate in some error of the diet, the proper regulation of this ought to form a principal part of their cure. Sometimes it may be necessary to change it almost wholly, or at least to withdraw something from whatever farinaceous substances are used.

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* 1. ℞ Cret. Præparat. gr. xij.
Aq. Menth. Pip. f. ℥ij.
Spirit. Lav. C. f. ℥ss.

Spirit. Carui, f. ℥ss. M.
ft. Mistura, cujus sumāt cochl. minim. ij. pro re nata. Adde, si sit necessitas,

Tinct. Opii, ♏ iv. singul. dos.
Vel,
2. ℞ Mistur. Cretæ, f. ℥ij.
Tinct. Calumb. f. ℥ij.

Liquor. Potassæ Subcarbonat. ♏. x.—xv. M.

Capiat cochl. minimum ter quaterve in die.

† 3. ℞ Decoct. Hordei, f. ℥iv.
Ol. Olivæ, f. ℥ij.
— Anis. ♏ iv. M.
ft. Enema.
Adde, pro re nata,
Tinct. Opii, ♏ v.—vj.

* 1. Take Prepared Chalk, twelve grains.
Peppermint Water, two ounces.
Compound Spirit of Lavender, half a drachm.
Spirit of Carraway, half an ounce.
Of this mixture the child may take two tea-spoonsful occasionally, adding, if necessary, to every dose,
Tincture of Opium, six drops.
Or,
2. Take Chalk Mixture, two ounces.
Tincture of Calumba, two drachms.
Solution of Subcarbonate of Potass, fifteen to twenty-two drops.
Mix them, and let a tea-spoonful be taken three or four times a day.

† 3 Take Barley Water, four ounces.
Olive Oil, two drachms.
Oil of Aniseed, six drops.
Mix them for a clyster. Add occasionally, when the child is much griped,
Tincture of Opium, eight to ten drops.

A costive habit of body is very apt to occasion flatulency and griping pains in infants. This ought therefore to be obviated by giving twice or thrice a week, as the occasion may require, a small quantity of the oleum ricini, or we may substitute a few grains of magnesia in a spoonful of the aqua anethi sweetened with a little syrup of roses or manna, to which may be added a few drops of tinctura sennæ in order to render it warmer, and quicken its operation. Either of these will be preferable to rhubarb, as this possesses too restringent a power, which is not to be counteracted even by joining it with magnesia. To promote the peristaltic motion in costive habits, it will be advisable to rub the region of the stomach and belly several times a day with a piece of flannel or the hand somewhat warmed, in addition to using medicine.

Where flatulency is an attendant upon a lax state of the bowels and indigestion, its remedy will consist in a removal of these complaints, as advised under the heads of Diarrhœa and Dyspepsia.

Dr. J. Clarke of Dublin, observes,* it is the general opinion of writers on the diseases of infants, that by far the greater number of these originate from acidity or coagulation of the milk, and that therefore absorbent and saponaceous medicines ought to be used, to counteract these morbid causes. From various considerations, he is induced to suppose that this opinion is founded on a fallacious analogy and superficial observation of the matters evacuated by infants. He finds, that healthy human milk suffers no coagulation from acids, ardent spirits, runnet, infusion of the stomach of a fœtus, nor from any of the known coagulating substances; and that it contains little or nothing of that matter which constitutes curd, so that there can be no power in the stomach of an infant to separate curd from it; that though it is supposed prone to run into an acescent or acid state, it is far less so than that on which the young of ruminant animals are fed; a cow's milk acquiring greater acidity in thirty-six hours than the human milk does in many days; and that cow's milk in moderate warmth becomes offensively putrid in four or five days, a change which human milk does not undergo in many weeks and sometimes months. He finds also that green fæces, commonly ascribed to acidity, because bile is turned green by acids, cannot arise from acid milk, because it is only the mineral acids which produce that change of colour; nor has the daily use of sour milk or vegetable acids any such effect on adults, and fæces of this colour are observed in cases where no acidity has been suspected.

Dr. Underwood, in speaking on the properties of human milk,† enters into a controversy with Dr. Clarke for alleging that this contained no sensible quantity of curdy matter. From the experi-

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* See his Treatise on the Properties attributed to Human Milk, inserted in the Transactions of the Royal Irish Academy.

† See his Treatise on the Diseases of Children.

ments made by the former of these gentlemen, it appears that the human milk does really contain no inconsiderable portion of curdy or caseous matter, though its separation is attended with peculiar circumstances. He allows that neither runnets, acids, nor spirits separate any very sensible quantity of this curd in the space of eight-and-forty hours, as they constantly do in cow's milk; but that in a longer time it is afforded in evident quantity. It appears also that human milk has less tendency than other kinds to run into acescency or putridity. The length of time necessary for the separation of the curd seems to have been the cause, in Dr. Underwood's opinion, of Dr. Clarke's denying its existence.

In a practical view this difference of sentiment on the subject does not seem very important. Although the coagulation of milk in the stomachs of infants labouring under disease be granted, it does not follow, that the chief attention of the practitioner should be directed to the destruction of the acidity, as the means of preventing such coagulation. For the acidity itself is only an effect, arising from a diseased action of the stomach, which of course would engage his attention.

OF VOMITING.

When what has been taken is returned crude and unaltered, it may be suspected to arise from over-feeding, and to require nothing more than temperance for its cure. Vomiting, however, is often an attendant on other complaints, and sometimes of itself constitutes an original disease.

Where there is a vomiting of digested food, it will be right to change the mode of diet, or to open the body by some gentle aperient. If these means do not answer, and the vomiting continues, it will be proper to clear the stomach by a gentle emetic, afterwards giving the saline medicine in an effervescing state, with a drop or two of the tincture of opium. We may at the same time apply a blister over the region of the stomach, or rub it well with an anodyne liniment.

OF A LOOSENESS OF THE BOWELS.

Various causes may and do occasion a diarrhœa in infants, and perhaps in the greater number of instances it is brought on either by too much or unsuitable food, in which cases a diligent attention must be paid both to the choice and regulation of the diet.

In some instances, however, it may be symptomatic of other diseases, or may arise from an exposure to cold, or an increased secretion of bile. In the latter case, it may be advisable first of all to cleanse the stomach by a gentle emetic; but in all it will be proper to clear the intestines by a few grains of rhubarb and magnesia, the operation of which being over, we may give a little of

the prepared chalk,* joined with some aromatic, twice or thrice a day.

When the stools continue to be more frequent than they ought to be, and are either slimy or tinged with blood, it will be necessary to repeat the rhubarb at proper intervals, and in the mean time the infant may take something to control the complaint,† as well as proper nutriment to recruit its strength. Flour, sago, or rice boiled in milk, together with the jelly of a calf's foot or isinglass, with a small addition of wine, will be good articles of diet under such circumstances.

In addition to these means it will be advisable to envelope the infant's body in flannel, so as to keep it of a proper temperature.

That form of diarrhœa which is attended by green stools and griping, may in general be removed readily by a brisk laxative, consisting of the submuriate of mercury and rhubarb, followed by small doses of magnesia and chalk. When obstinate, we may give half a grain of hydrargyri submurias each or every other night. The application of a small blister about the size of a crown piece to the pit of the stomach, will sometimes produce a very good effect where internal remedies have failed.

When the irritability of the intestines seems to be great, the fluid stools being thrown out with quickness and force, and the strength appears to be rapidly sinking, we may advise a clyster composed of starch, with a few drops of tinctura opii, to be in-

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* 1. ℞ Cret Præparat. ʒss.
Aq. Anethi,
— Cinnam. āā f. ℥jss.

Tinct. Card. C. f. ʒij.

Syrup. Cort. Aurant. f. ʒj. M.
Capiat cochl. j. infantis bis terve in die.

Vel,

2. ℞ Pulv. Cinnam. Comp. gr. ij.

Cret. Præparat. gr. vj. M.
ft. Pulvis 6tis horis sumendus.

† 3. ℞ Confect. Aromat. ℈j.
Aq. Puræ,
— Cinnam. āā f. ℥jss.

Tinct. Catechu, f. ʒj.
——— Opii, ♏ viij. M.
Cochl. unum infantis mane, hora meridiana, et nocte sumendum.

Vel,

4. ℞ Misturæ Cretæ, f. ℥ij.
Aq. Cinnam. f. ʒj.
Tinct. Kino, f. ʒj.
——— Opii, ♏ vij.—x. M.

ft. Mistura, cujus capiat cochleare infantis bis terve in die.

* 1. Take Prepared Chalk, half a drachm.
Dill Water,
Cinnamon Water, of each one ounce and a half.
Compound Tincture of Cardamoms, two drachms.
Syrup of Orange Peel, one drachm.
Of this mixture, a pap-spoonful is to be taken twice or thrice a day.

Or,

2. Take Compound Powder of Cinnamon, two grains.
Prepared Chalk, six grains.
Mix them, and let this powder be taken every six hours.

† 3. Take Aromatic Confection, one scruple.
Pure Water,
Cinnamon Water, of each one ounce and a half.
Tincture of Catechu, one drachm.
——— Opium, twelve drops.
Of this mixture, one pap-spoonful is to be taken morning, noon, and night.

Or,

4. Take Chalk Mixture, two ounces.
Cinnamon Water, one ounce.
Tincture of Kino, one drachm.
——— Opium, from ten to fifteen drops.
Of this mixture, let a pap-spoonful be given to the child twice or thrice a day.

jected twice or thrice a day. The external application of opium by friction or plaster, is likewise useful. In such cases the application of a blister proves frequently of great use.

TRISMUS NASCENTIUM,* OR THE LOCKED JAW OF INFANTS.

This is a disease of very frequent occurrence in the West Indies, where many infants are carried off by it soon after birth, and especially negroes and those of colour, as they are usually called. It is well known, however, to prevail in other parts of the world, and is frequently met with in Minorca,† in Switzerland, some of the northern districts of Scotland, especially in the island of St. Kilda, and among the children of the Westmann islands‡ near Iceland. It has also been met with in Ireland.§

In most cases the disease is wholly confined to the jaw; but in a few a considerable contraction and rigidity of other muscles of the face, with strabismus and rolling of the eyes, together with subsultus tendinum, have been observed.

It has been attributed to visceral irritation, costiveness, and not purging off the meconium in the bowels; to dividing the navel-string with a blunt lacerating instrument; to not paying attention to its falling off, and consequent irritation from a neglect of the remaining sore, which assumes a sloughy appearance; and to exposures to cold, and currents of air, negro women in the West Indies being usually permitted to lie in at their own houses, which are often in but very indifferent repair.

Dr. James Clarke, in his Treatise on the Yellow Fever and other West India Diseases, informs us, that from having observed that children born in large negro huts generally were exempt from any attack of the disease, and that white children, or those of free people, who had their kitchens apart from their dwelling-houses, escaped the jaw-fall (the term by which the disorder is known in places where it is prevalent,) he suspected that the smoke from burning wood, which is the usual fuel in the West Indies, was the cause of it. In consequence of this, he gave orders that no fires should be allowed in the negro houses where the lying-in women were, which effectually answered the purpose of preventing the disease. He adds, that he recommended a lying-in hospital to be built on every estate near the negro houses with a planked floor, so that no fire could be kept in it; since which no children, who were born in these hospitals, and remained in them with their mothers for nine days, have ever been attacked with this disease.

I perfectly agree with Dr. Clarke that it is highly necessary

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* Trismus Nascentium being a spasmodic disease, ought, in adhering to classification, to have been included among those of this nature; but, as being peculiar to infants, is inserted here.

† See Cleghorn on the Diseases of Minorca.

‡ See M'Kenzie's Travels in Iceland, p. 413.

§ Dublin Hospital Reports, vol. i.

every plantation should be furnished with a lying-in house, and it is what I strongly enforced to West India proprietors in a work* I published some years ago; but I must dissent from him in ascribing the smoke arising from a wood fire, as the sole cause of the trismus nascentium. Certain it is that infants are never attacked with it after the ninth day of their age, if even exposed to the influence of this cause; and it is therefore probable that it is not the real, and far less the sole one. I am much inclined to suppose that the disease often arises in negro children from the want of attention to the falling off of the navel-string, and the consequent irritation from a neglect of the remaining sore, which becomes sloughy. The period at which the disease occurs, seems to correspond exactly with the falling of the funis, and the ulceration left behind. What makes strongly against Dr. Clarke's supposition is, that tetanus (of which trismus nascentium is a species) is most usually cured very readily when it arises from an exposure to cold, or any other cause than the irritation occasioned by a wound. When produced by this, it generally proves fatal. The disease in question terminating always in this manner, may with great propriety, therefore, be ascribed to a cause which is of a similar nature.

Another argument, which shows the fallacy of Dr. Clarke's supposition with respect to smoke from burning wood being the chief cause of trismus, is, that during my practice in the West Indies, I met with some instances of the disease in white children, in whom it was impossible to have arisen from this cause, as no fire-places are to be found in the dwelling-houses of the white inhabitants, and the kitchen is always a detached building, into which such infants never enter.

Although the exciting cause of trismus nascentium probably is irritation in the wound, from a division of the funis and the process of sloughing connected therewith, still the disease appears to be connected with a more or less vitiated state of the atmosphere, as it occurs more frequently in hospitals than in private dwellings.†

Trismus nascentium proves fatal in most instances.

No effectual means having yet been discovered for the cure of this disease, all that can be done is to avoid as much as possible the several causes which have been mentioned as being likely to give rise to it. Every lying-in woman ought therefore to be accommodated in a comfortable house, which is annoyed neither by smoke, rain, nor any partial current of air. On the birth of the infant, the navel-string should be divided with a pair of sharp scissors, after which the portion that remains should be wrapped up in a little scorched linen. No force whatever must afterwards be used to bring on its separation; it should come away sponta-

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* See Medical Advice to the Inhabitants of Warm Climates, p. 10 of the Introduction.
† See Dublin Hospital Reports, vol. i.

heously; and if any little ulceration is left behind, it ought to be attended to, and daily be dressed with some mild healing ointment, such as the unguent. cetacei or ceratum calaminæ, avoiding at the same time any great pressure upon it by bandages.

As I have supposed the disease to arise most commonly from the irritable state of the divided funis, might it not be advisable, by way of prevention, to wet the part frequently with a watery solution of opium?

To remove costiveness or visceral irritation, and carry off the meconium, which has been assigned by some practitioners as a probable cause, one or two tea-spoonsful of the oleum ricini may be given to the child the day after its birth, which may again be repeated in two or three days, should the mother's milk not procure a sufficient number of stools.

On an attack of the disease, we ought certainly to have recourse to the means advised under the head of Tetanus, however unsuccessful they may be likely to prove. A few recoveries, it is said, have been effected by the warm bath.

FEBRIS INFANTUM REMITTENS, OR THE INFANTILE REMITTENT FEVER.

From the age of one year to five or six, children are liable to be attacked with a fever, that makes its advances very gradually, manifesting itself by irregularity in the bowels, which are sometimes too costive, and at others too much relaxed.

On its coming on, the child becomes fretful, his lips are dry, his hands hot, his breath short, the head painful, and his pulse quick, being often 120 in a minute: he is unwilling to stir or speak, the sleep is disturbed by startings, and the food rejected; sometimes very little is discharged from the intestines; and at others too much, the stools being often mucous or slimy; some children are delirious, or lost and stupid; many for a time are speechless. In the course of the day there are several slight accessions of fever, during which the child is usually drowsy; in the intervals of these paroxysms he appears tolerably well, though at times more peevish than usual.

These symptoms probably manifest themselves, more or less, for eight or ten days, when all at once a more violent paroxysm of fever will arise, preceded by a shivering fit and by vomiting. The pulse rises to 140 in a minute; the cheeks are flushed, the drowsiness is much increased, and the child keeps picking almost incessantly at the skin of the lips and nose, and of the angles of the eyes.

This species of fever is mild at its commencement, slow in its progress, and very uncertain in its event. In some respects it resembles hydrocephalus acutus, and I apprehend is sometimes mistaken for it; but in the latter there are occasional screamings, with much tossing of the hands above the head, intolerance of light, with more or less of squinting; whereas in the remittent

fever of infants, none of these appearances are to be met with. In this fever the desire for food is destroyed, and the little patient will take neither aliment nor medicine. In hydrocephalus, on the contrary, he will usually take whatever is offered to him without reluctance. The fæces are remarkably changed from their natural appearances in the remittent fever, being sometimes black, and smelling like putrid mud; and at others they are curdled, with shreds of coagulable lymph floating in a dark-greenish-coloured fluid. In acute hydrocephalus we meet with nothing very similar to the motions.

The infantile remittent fever appearing to depend partly upon an irritation of the intestines, and perhaps partly upon an absorption of their putrid contents, the proper intentions of cure are to clear the stomach by a gentle emetic, and the bowels by purgatives, to moderate or remove the febrile symptoms, and then, if necessary, to restore the lost energy by tonics.

The first thing therefore to be done is to cleanse the stomach by a few grains of ipecacuanha, which will be preferable to any antimonial preparation, and soon afterwards to administer some active purgative: I mention active because the intestines are usually so torpid, that what would on another occasion be considered a full dose, will have no effect in this complaint. For restoring the healthy actions and secretions of the chylopoietic viscera, nothing seems so efficacious as small and often repeated doses of the submuriate of mercury, followed up after some hours by a solution of the sulphate of magnesia in an infusion of senna, or by a dose of castor oil. When the bowels are very irritable, small quantities of mistura cretæ with a few drops of tinctura opii must be given alternately with the purgatives above specified.

If the head is much affected, its temperature greater than the rest of the body, and there are other marks of sanguineous determination to the brain, the case must be treated as one of hydrocephalus acutus. Blood should be freely drawn by leeches, by cupping, or by opening the external jugular vein or a branch of the temporal artery.

A tepid bath may be useful in this fever after the stomach and bowels are properly cleansed.

To obviate debility when the fever goes off, we may recommend a daily use of some tonic medicine,* if judged necessary.

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* 1. ℞ Decoct. Cinchon. f. ℥iij.
Tinct. Calumb. f. ℥ij.
Acid. Sulph. Dilut. ♏ x. M.
Capiat cochl. infantis bis terve in die.

Vel,

2. ℞ Pulv. Cascarillæ, ℥j.
—— Rhei, gr. xij.

* 1. Take Decoction of Peruvian Bark, three ounces.
Tincture of Calumba, two drachms.
Diluted Sulphuric Acid, fifteen drops.
Mix them: The dose may be a pap-spoonful twice or thrice a day.

Or,

2. Take powder of Cascarilla, one drachm.
—— Rhubarb, twelve grains.

APHTHÆ, OR THRUSH.

The thrush in children has generally been supposed to arise from acidities, or some other acrimonious humour lodged in the stomach and bowels. Various causes of derangement in the alimentary canal are certainly to be regarded as those which occasion aphthæ. One of the chief of these is worms, and it appears in this way that these two complaints are so frequently conjoined. Another occasional cause is bad milk, which may be vitiated by whatever is injurious to the nurse's health, such as great anxiety, violent passions, poor diet, &c.

In some instances the thrush may possibly depend upon the natural habits of the infant as well as upon the mode of bringing it up, particularly in regard to food, air, and the state of the bowels. This seems a warrantable conclusion, inasmuch as the thrush is sometimes found to seize every infant in certain families, in whatever way the children may be managed, as well as to occur occasionally in others upon a want of proper attention to the state of the alimentary canal, where a great number of other children properly watched have uniformly escaped it.

The disorder generally appears first in the angles of the lips, and then on the tongue and cheeks, in the form of little white specks. These, increasing in number and size, run together more or less according to the degree of malignity, composing a thin white crust, which at length lines the whole inside of the mouth from the lips even to the œsophagus, and is sometimes found to extend into the stomach and throughout the whole length of the intestines; producing also a redness about the anus. When the crust falls off, it is frequently succeeded by another of a darker colour or livid hue; but this happens only in the worst kind of thrush, for there is a milder sort that is spread thinly over the lips and tongue, which returns a great many times, and always lasts for several weeks.

When the thrush is an original disease, it is never attended with any fever at its commencement, although the mouth is frequently so much heated as to excoriate the nipples of the nurse, and becomes so tender that the child is often observed to suck with reluctance and caution; but when it has arisen in consequence of severe bowel complaints, or other infantile disorders, it is then sometimes accompanied with fever and a severe diarrhœa. Even in very bad kinds of thrush there does not appear, however, any evident fever at the commencement of the complaint; but towards the close it may be apparent, and is sure to be of the low kind. Violent hiccups, vomiting, sense of suffocation, great prostration of strength, severe diarrhœa, coma, and aphthæ being of a brown colou,and any of

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Ferri Subcarbonat. ℈ss. M.	Subcarbonate of Iron, half a scruple.
Et in chartulas xij. divide, quarum unam dosem sumat mane et vespere.	Mix them, and divide them into twelve papers, of which take a dose morning and evening.

the symptoms of cynanche maligna attending, are to be considered as very unfavourable.

The disease, when recent and confined to the mouth, may in general be easily removed; but when of long standing, and extending down to the stomach and intestines, it very frequently proves fatal. Among the French, and especially in their public hospitals, the thrush seems to be a much severer disease than in England.

To evacuate the stomach of acidities or other acrimonious humours, it will be proper on the first appearance of aphthæ to give a gentle emetic. This may be done even in slight cases; but where the specks are of a dark colour, and the inside of the cheeks are beset with them, the remedy, by emptying the stomach of the crude juices and acrid matter, will be likely to prove highly useful.

After the operation of the emetic we may recommend a course of the testaceous powders, giving a preference to the purest and softest. If the child is of a costive habit, a little magnesia may be advised; on the contrary, if its bowels are rather loose, and its frame delicate, we may then substitute two or three grains of the compound powder of contrajerva. The testaceous powders are to be administered for three or four days successively, and then we may prescribe something more laxative, to carry down the scales as they fall off from the ulcerated parts. In mild cases, rhubarb is regarded as the best medicine; but where the child is of a robust habit, and the disease is violent and has extended rapidly, it may be necessary to make an addition of a few grains of the submuriate of mercury.

When a child of a weak habit is attacked with thrush which appears of a malignant nature, and which from its dark appearance threatens to terminate in gangrene, we should give a decoction of the bark of cinchona joined with a little aromatic confection. To render its efficacy the more certain, it may likewise be used in the form of clyster, with the addition of a few drops of tinctura opii to prevent its passing off by stool.

In order to keep the infant's mouth clean and comfortable, and to prevent as much as possible any injury to the nurse, as well as to dispose the sloughs to fall off, and incline the parts underneath to heal, it is customary to make use of detergent applications in the form of gargles and lotions. In the gangrenous thrush it will be best to wash the parts frequently by means of a syringe, or a piece of soft linen rag rolled round the finger, with a strong decoction of cinchona bark, rendered somewhat sharp with the diluted sulphuric acid; but in common cases of thrush, unattended by any disposition to gangrene, we may employ either of the gargles recommended below.*

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* 1. ℞ Decoct. Hordei, f. ℥iv.
Sodæ Sub-borat. ʒss.—ʒj.

* 1. Take Decoction of Barley, four ounces.
Sub-borate of Soda, half a drachm to one drachm.

If the aphthæ extend to the intestines, it may be advisable to sheath the parts by emollient clysters,* repeating them twice or thrice a day.

When an excess of purging attends, the medicine advised under the head of Diarrhœa will be necessary.

The other means and remedies directed for the cure of cachexia aphthosa, in the former part of this publication, will likewise be proper in this species of thrush; to which head I must beg leave to refer the reader.

PROLAPSUS ANI, OR FALLING OF THE FUNDAMENT.

We often meet with this disease in children of a weak habit, or who have been much afflicted with severe purgings. It is also a frequent consequence of irritation in the rectum, arising from the nestling of ascarides in the gut.

In prolapsus ani, considerable advantages have been experienced from a frequent use of astringent injections,† particularly of an infusion of galls or oak-bark; and when a small proportion of opium is added to the liquor, it tends greatly to lessen the irritation in the extremity of the rectum. The same may be used as a wash to the protruded parts, after which they may be sprinkled with a little Armenian bole, powdered very fine, and then be reduced. To effect this, we should first order the protruded parts to be well fomented with a decoction of poppy-heads, after which we are to make a gradual and general compression of the protruded gut, and thereby reduce it, and place it within the anus. In chil-

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Mellis Rosæ, f. ℥ss. M.
ft. Gargarisma.

Vel,

2. ℞ Confect. Rosæ, ℥ss.

Aluminis, ℈ss.
Aq. Puræ, f. ℥iv.
Acid. Sulph. Dilut. ♏ x.

Tinct. Myrrh. f. ℥ss. M.

* 3. ℞ Decoct. Avenæ, f. ℥iij.
Gum. Acac. Pulv. ℈j.

Ol. Olivæ, f. ℥ss. M.
ft. Enema octavâ quâque horâ adhibendum.

† 4. ℞ Decoct. Quercûs, f. ℥iv.

Tinct. Opii, ♏ viij.—xj.

ft. Enema.

Vel,

℞ Liquor. Calcis.
Infus. Gallar. ää f. ℥ij.

Vini Opii, ♏ viij. M.
ft. Enema.

Honey of Roses, half an ounce.
Mix them for a gargle.

Or,

2. Take Confection of Roses, haf an ounce.
Alum, half a drachm.
Pure Water, four ounces.
Diluted Sulphuric Acid, fifteen drops.
Tincture of Myrrh, half an ounce.
Mix them for a gargle.

* 3. Take Oatmeal Gruel, three ounces.
Powdered Gum Acacia, one drachm.
Olive Oil, half an ounce.
Let this clyster be administered every eight hours.

† 4. Take Decoction of Oak Bark, four ounces.
Tincture of Opium, twelve to fifteen drops.
Mix them for a clyster.

Or,

5. Take Lime Water,
Infusion of Galls, of each two ounces.
Vinous Tincture of Opium, twelve drops; for an injection.

dren it is often difficult to reduce the last folds if the finger is pushed through the orifice; for when it is again withdrawn, the gut slips down. We may, therefore, twist a piece of stiff paper into the form of a cone, soften the point by wetting it, and oil the surface: having done this, place it upon the point of the finger, and so push the last portion of the gut within the anus; the cone will slip out easily without bringing down the gut with it.*

Another way of reducing the prolapsus is by using a piece of distended gut to push it up, and this distended gut may be pressed up altogether within the rectum, so as to replace it effectually. On letting out the air from the distended gut, it is readily to be brought out without the prolapsus following it.

The child should not be permitted to strain, nor take the usual position at stool. It should be kept in the erect posture, and his hips ought to be held together, so as to compress and support the gut.

With the view of strengthening the parts, the debility of which is in general to be considered as the chief cause of this disease, we should advise not only the cold-bath in a general way, but likewise the throwing cold water more directly on the buttocks and back of the child; and besides these tonic means it should be put under a course of steel, myrrh, and the bark of cinchona.—See these under the head of Dyspepsia.

ATROPHIA ABLACTATORUM, OR WEANING BRASH.

This disease occurs in children that are weaned too early, or such as are attempted to be reared without the breast, and also where improper food is given with or without sucking. It appears most frequently in children of a lax fibre, and whose constitutions at a more advanced stage of life might be supposed liable to the attack of strumous disorders.

It commences with frequent griping and purging, in which the stools are usually of a green colour, and is often accompanied with bilious vomiting. In the progress of the disease the stools are sometimes ash-coloured and shining, and sometimes lienteric.—Atrophy succeeds to these symptoms, and convulsions often come on, and carry off the child.

A modern writer† supposes the exciting cause of this disease to be too sudden an alteration of the diet of a child at an unfit season.

The weaning brash, if attended to in time, may in general be removed; but if neglected, it frequently proves fatal before the sixth or seventh week.

On dissection the mesenteric glands usually appear either inflamed or enlarged. In some instances tubercles have been found in the lungs. In others the liver is firm, and larger than natural,

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* See Mr. Charles Bell's Treatise on Diseases of the Urethra.

† See Essay on the Diseases of Children, by J. Cheyne, M.D. vol. i. p. 34.

and the gall-bladder is filled with dark green bile. Remarkable contractions of the diameter of the gut in several parts of the intestinal canal, have been perceived in some instances.

A proper attention to diet constitutes the first point to be attended to for the removal of the disease; and, above all, a return to the natural food, the mother's milk, where circumstances will admit of it. Where they do not, animal food, in the form of broth or jelly, should principally be employed. Vegetable food must be prohibited, as well as fruits, acids, and compositions of which butter and sugar form a part. Pure air, exercise, gentle frictions, and frequent washings of the body with tepid or cold water, will be good prophylactics. Flannel worn next to the skin, worsted stockings, and every precaution against cold irregularly applied, should be attended to. The employment of a warm bath, of a temperature from 90 to 100, twice or thrice a week, might prove advantageous.

For the cure of the disease, occasional gentle laxatives, such as rhubarb, with absorbents and aromatic medicines interposed, together with minute doses of ipecacuanha joined with the submuriate of mercury, as prescribed below*, seem most advisable.

Where the disease arises in children of three or four years of age, we must have recourse to the means recommended under the head of Atrophia.

OPHTHALMIA PURULENTA, OR PURULENT OPHTHALMIA.

This disease is noticed under the head of an Inflammation of the Eyes.

TEETHING.

Of all the occurrences to which children are liable, not one is attended with such grievous and distressing symptoms as difficult dentition. With regard to the time of their cutting teeth, no fixed or exact period can be laid down, as some cut their first tooth at three or four months old, while others again have not the smallest appearance of a tooth before the eighth or ninth month. Dentition generally commences, however, in the majority of children, between the fifth and eighth month, and the process of the first teething commonly continues to the sixteenth at the least, but often much longer. The two fore-teeth, or dentes incisores of the under jaw, are those which usually appear first, and shortly after these are observed two more come out in the upper one, exactly opposite

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* 1. ℞ Pulv. Ipecac. gr. j. ad. ij..
—— Zingib. gr. iij.
Hydrargyr. Submuriat. gr. ss.—ij.
M.
Et in chartulas iv. divide, quarum unam dosem sumat infans singulis aut alternis noctibus.

* 1. Take Powder of Ipecacuanha, one grain to two grains.
—— Ginger, three grains.
Submuriate of Mercury, half a grain to two grains.
Mix them, and divide them into four doses, of which let the child take one each night, or every other.

to the two former. These are succeeded by the four molares, then the canini, and the last of all, of an infant's first teeth, their antagonists, or the eye-teeth, making in all sixteen. This, it is well known, is the ordinary number of a child's first teeth, as they are called; but some infants cut four double teeth in each jaw instead of only two, making the whole number twenty.

In children who are healthy and strong, the process of dentition goes on as has just been described, and the teeth are cut soon and easily; but in unhealthy and weak infants, the process is both slow and uncertain. Accordingly, children sometimes cut their teeth irregularly, both by the teeth appearing first in the upper jaw, and also at some distance, instead of being contiguous to each other, which has been accounted, and with some reason, an indication of difficult or painful dentition. It may also be remarked, that the ease or difficulty of dentition may be guessed at by the circumstances under which the two first teeth shall happen to be cut, the succeeding ones generally making their way in a correspondent manner.

At six or seven years of age, all children shed their teeth in a gradual manner, and get a fresh set, and about the age of one-and-twenty four more come out, one in the corner of each jaw, which, from their appearing at that period of life, have been named dentes sapientiæ.

Dentition is usually preceded by, or accompanied with, various symptoms: the child drivels; the gums swell, spread, and become hot: there is often a circumscribed redness in the cheeks, with eruptions on the skin, especially on the face and scalp; a looseness ensues with gripings, stools of a green, pale, or leaden blue colour, sometimes mucous, and often thick; and the child is watchful and peevish, starts during sleep, and seems convulsed in particular parts of its body. In almost all cases the child shrieks often, and thrusts its fingers into its mouth. These symptoms are sometimes followed by a cough, difficulty of breathing, scrofula, marasmus, and hydrocephalus, and very frequently by much febrile heat, thirst, and convulsions.

When the child's body continues open, and none of the violent symptoms attendant on much irritation ensue, we need seldom apprehend any bad consequences from teething.

It has often been observed, that those children in whom there is a copious flow of saliva, suffer the fewest inconveniences during the process of dentition; that such infants cut their teeth more readily in winter than in summer; that such as are inclined to be lean cut them more easily than those that are fat; and those whose bowels are regularly open, the most safely of all.

The system during dentition being disposed to inflammation, strong lusty children are much oftener attacked with fever than the tender and delicate; like athletic adults, who are more disposed to inflammatory complaints than those who are of a colder, but less healthy temperament: and it is by acute fever or convulsions

that infants are carried off, who are well known to survive various lingering and distressing complaints if their viscera are sound. The extremes of high health and of debility are both attended with some degree of danger; the one being exposed to acute fever or convulsions, the other to slow hectic or marasmus.

The evils arising in dentition are often prevented or greatly alleviated by spontaneous diarrhœa, in consequence of its lessening the quantity of blood in the system, and diminishing the strong action of the heart and arteries. In children whose constitutions are disposed to plethora, (which may be known by their florid complexion and fulness,) it will therefore be proper to encourage any spontaneous diarrhœa that may arise, unless it runs to excess; but where none arises naturally, we ought then to give gentle purgatives, such as the sulphate or supersulphate of potass, in such doses as to procure two or three loose evacuations in the twenty-four hours.

Where a considerable degree of fever attends on dentition, drawing blood from the immediate neighbourhood of the parts affected with irritation and pain, by slightly scarifying the gums, and applying leeches behind the ears, is often practised, and not unfrequently with advantage. In some instances we might possibly substitute blisters instead of the leeches with a good effect. If the symptoms should not yield to these means, the use of a tepid bath once or twice in the twenty-four hours, and the exhibition of small doses of ipecacuanha, with a saline draught afterwards, or a solution of tartarized antimony in such moderate doses as to produce a gentle diaphoresis, will be proper.

Opium is sometimes resorted to for the purpose of allaying pain and irritation during difficult dentition, but the practice should be adopted with due caution. About a tea-spoonful of the syrupous papaveris will be the safest opiate we can administer in cases of urgent necessity. In others, fomenting the side of the face with a solution of the extract of poppies in a decoction of chamomile (in the proportion of half an ounce of the extract to a quart of the decoction,) by means of a piece of sponge, may be attended with beneficial effects, avoiding thereby the evil consequences attendant on opiates given internally. Nurses are indeed too apt to administer some preparation or other of opium in the watchings and complaints of children, that their own rest may not be disturbed throughout the night. This practice merits the highest censure.

When the gums have become tumid and swelled so as to excite a high degree of pain and febrile heat, instead of simple scarifications, an incision should be carried down to the tooth, so as also to divide the membrane which covers it. When the gums over the molares require to be divided, it will not be sufficient to make the incision merely in the direction of the jaw, but transverse ones must also be made, to set the tooth quite at liberty, so that in its further advance it may not irritate the gum again.

The practice of giving children coral and other hard substances to put into their mouths during the period of teething, is improper, as they have a tendency to harden the gums. A piece of small wax candle that will yield in some measure to whatever pressure is made upon it by the gums of the child, may be serviceable.

If acidity prevails during dentition, it is to be obviated by proportionate doses of magnesia or the mistura cretæ; and if accompanied by flatulency and griping pains, carminatives, such as carraway seeds, or a drop or two of the oleum anisi, may be mixed with its food.

During dentition, children are sometimes troubled with ulcerated gums; but these may be easily cured by keeping the body open, and touching the parts affected with some astringent application. As much alum as will give a moderate roughness to a little honey, or a little sodæ sub-boras and honey, may be used.

Pure air, proper exercise, wholesome food, an open belly, and every thing that has a tendency to promote general health, and to guard against fever, will greatly contribute to the safety of dentition, as well as to the child's passing quickly through this hazardous period.

CONVULSIONS.

Violent spasmodic affections sometimes attack infants without any apparent cause; but in general they are produced either by a lodgment of some acrid matter in the intestines, or wind pent up, or they arise from teething, worms, the sudden striking in of a rash, or the accession of some constitutional disease, as, for example, the small-pox, scarlatina, &c. Any trifling matter, capable of irritating the nervous system, will induce symptomatic convulsions in some infants; while others again will withstand a great deal. The younger and more irritable the infant is, the more liable will it be to symptomatic convulsion, especially from any considerable disturbance in the first passages.

We are informed by Dr. Clarke of Dublin, that owing to mismanagement and bad air, an epidemic convulsive disease prevailed in the lying-in hospital of that city among the infants within the first nine days, which swept off great numbers of them annually; but this was at length obviated by discovering the cause.

When convulsions proceed from any other cause than an eruption of the small-pox (in which they are usually regarded as prognosticating a favourable species of it,) they are always dangerous, as well as alarming. A surer indication of danger is to be drawn from the distance of the paroxysms than from the forcible contractions of the muscles during the fit. Where the intervals are short, although the fit itself be not long nor violent, the disease is to be considered as more dangerous than where severe paroxysms are attended with long intervals.

In the treatment of convulsions in children, the chief object to be attended to is the removal, if possible, of the cause which has

given rise to them. If they seem to be occasioned by improper food and indigestion, a gentle emetic may be given, and for this purpose we may employ a weak solution of tartarized antimony, of which a tea-spoonful may be administered every ten or fifteen minutes until the desired effect is procured. When supposed to proceed from a lodgment of acrid matter in the bowels, this ought to be removed by a laxative clyster, assisted by some gentle aperient, given by the mouth, such as calomel, followed by an infusion of senna with a little tincture of jalap; if from flatulency, then carminatives ought to be used, as advised under that particular head; and if from teething, whenever the tooth can be discovered working a passage through the gum, scarifications may be made with the edge of a lancet immediately over it; and this operation we may repeat for several successive days, till either the tooth makes its way, or the convulsions cease. If scarifications are not found to answer the purpose, we may cut boldly down to the tooth, and liberate it in every part; and this plan we may likewise adopt with all such as are manifestly making their way.

Worms having been looked upon as a frequent cause of recurring convulsions, we should always have recourse to the remedies which have been advised under that particular head, when from the prevailing symptoms we suspect them to have been excited by this cause.

Should convulsions have arisen from the sudden disappearance of a rash, or the drying up of a discharge from behind the ears, the reappearance of these ought to be promoted.

Where the fits are of some duration or frequent recurrence, a warm-bath at the temperature of 92 or 94 degrees of Fahrenheit's scale should be employed, and, if necessary, be often repeated: this, by diffusing the circulation more generally, and determining it to the surface of the body, may be highly useful.

As in the greater number of cases of convulsions there are strong reasons for believing that the head is overloaded with blood, it will be advisable to take away some, either by leeches, cupping, or opening the external jugular vein. When convulsions are not relieved by the means which have been suggested, blisters should be applied to the lower extremities.

The application of cold fluids or ice to the scalp, having previously shaved the head,* has been attended with happy effects in cases of convulsions, as well as in inflammation of the brain, both in children and adults.

With the view of shortening the duration of an individual paroxysm, there is scarcely any stimulus so powerful as the plentiful affusion of cold water over the face, the body being placed in an horizontal position with the face upwards. The effluvia arising from volatile alkali or ammonia, plentifully inhaled, will also prove a useful stimulus. As antispasmodics, the preparations of

* See Commentaries on the most important Diseases of Children, by John Clarke, M.D.

ammonia and æther will be most serviceable, although asafœtida, valerian, castor, musk, amber, and other fetid substances, are often given. It is only in cases of the most urgent necessity that we should venture on giving a small quantity of the syrup of poppies, or a few drops of the tincture of opium.

In those convulsive attacks which frequently precede an eruption of the small-pox, nothing will be required but the free exposure of the child to cool air.

The liquor potassæ subcarbonatis given in doses of from five to fifteen drops, according to the age of the child, and repeated every ten minutes, has been known effectually to remove convulsive affections in young children, which had for a length of time resisted the powers of the oxyd of zinc, musk, extractum hyoscyami, clysters of asafœtida, anodyne injections, with opium and blisters. It is probable, however, that in these cases the fits arose from severe griping pains in consequence of acidity.

Where a high degree of organic debility prevails, volatile alkali, viz. the spirit. ammoniæ succinatus in doses of a few drops, in some proper vehicle, may be substituted for the former. In clysters, the liquor vol. cornu cervi is likewise of avail in these cases in a greater or less dose, according to circumstances.

When convulsions are not preceded by any of the usual symptoms, they may be regarded as idiopathic. In difficult labours, for example, the brain is often much compressed, and soon after delivery the child is attacked with fits. In such cases it will be advisable to let the navel-string bleed one or two tea-spoonsful before it be tied. Thus the oppression of the brain will be relieved, and the disagreeable consequences will be prevented. But if this has been neglected, and fits have actually come on, we must then endeavour to make a revulsion, and empty the vessels of the head by opening the jugular vein, or by applying leeches to the temples; by procuring an immediate discharge of the meconium; by putting blisters behind the ears, or to the back; by bathing the feet in warm water; and by rubbing the soles with liquor ammoniæ subcarbonatis.

Inward fits are much talked of by nurses, and some authors have indeed made mention of them; but more particularly Dr. Armstrong. Infants, during the first month, are said to be more or less liable to them. The symptoms are these: the child appears as if it was asleep, but the eyelids are not quite closed; and if you observe them narrowly, you will see the eyes frequently twinkle with the white of them turned up. There is a kind of tremulous motion in the muscles of the face and lips, which produces something like a simper or smile, and sometimes the appearance of a laugh. As the complaint increases, the infant's breath seems now and then to stop for a time; the nose becomes pinched; there is a pale circle about the eyes and mouth, which sometimes changes to livid, and comes and goes by turns; the child starts, especially if you stir it ever so gently, or if you make the least

noise near it. Thus disturbed, it sighs or breaks wind, which gives relief for a while; but presently it relapses into dozing. Sometimes it struggles hard before it can break wind, and seems as if falling into convulsions; but a violent burst of wind from the stomach, or vomiting, or a loud fit of crying, sets all to rights again.

For the removal of these, Dr. Armstrong recommends us to give antimonial wine in a few drops, according to the age of the infant; but all that appears to be necessary is, to take up the child when it sleeps too long, and the smile often returns, with any of the other symptoms just described, and to tap it gently on the back, rubbing its stomach and belly well before the fire. This gentle exercise will bring a little wind from its stomach (which is supposed to be the cause of the complaint,) and the child will then go quietly to sleep again. Should these simple means not prove sufficient, some carminative may be given to it, such as a drop or two of the oleum anisi or oleum carui on a bit of white sugar.

SYPHILIS INFANTUM, OR THE VENEREAL DISEASE IN INFANTS.

Although a child sometimes shows appearances of syphilis at the time of its birth, still it more frequently happens that none are to be observed until after an expiration of at least ten or twelve days.

When the disease exists at the time of its birth, or shows itself soon afterwards, it makes its appearance in the form of an erysipelatous efflorescence dispersed over the whole body, the cuticle is in part or altogether destroyed, and a serous matter oozes from the skin. When it makes its appearance some days after the birth, irregular blotches of a light red colour, and somewhat elevated, arise about the anus, nates, and pudenda. Crusty eruptions appear in other parts of the body, and these in some places continue dry and scale off, but in others an acrid thin matter exudes from them.

Although we may not be able to trace any marks of the existence of the disease in either the father or mother of the child, still it may possibly be derived from them.

When children are born with the appearances just described, or several dead births have followed, we may, for the most part, attribute them to the parents labouring under some constitutional affection of syphilis, without their being probably aware of it. In all such cases it will be necessary to put both of them under a mercurial course.

To effect a cure in a child at the breast, it will in general be sufficient to give the necessary medicines to the woman who nurses it; which office should always be undertaken by the mother; as, by getting any other to suckle it, she would in all probability soon be infected likewise, as happened in a case which lately fell under my care. In the progress of the cure, the same rules and cautions are to be observed as have already been pointed out in the syphilis of adults. In instances of this nature, an alterative course long persisted in ought to be preferred to that of exciting any degree of salivation.

If it is found necessary to wean the child before the cure is completed, or to introduce mercury into the habit of the child from the very beginning, instead of giving it to the woman who suckles it, we may then direct that it shall take about a quarter of a grain of the hydrargyri submurias, every night and morning, mixed up in a little honey or thick syrup; which course ought to be continued for at least a week or ten days after the disappearance of all the symptoms.

By a due attention to the following circumstances we shall be enabled to ascertain whether the nurse infects the child, or the latter the nurse. Where the breasts of the nurse and the mouth of the child only are diseased at one time, we cannot give a decisive opinion until we have other evidences. If, however, the breasts of the nurse be the only parts diseased, while other marks of syphilis, besides those of the mouth, are apparent on the infant, it is very probable that the complaint has been communicated by the child; on the contrary, if the infant has no disease except of the mouth, and other marks of it appear on different parts of the nurse besides the breasts, it is then highly probable that the infant has imbibed the disease with the breast milk. Further, if the nurse has secondary symptoms and the child only primary ones, we may reasonably suppose that the complaint has been communicated by the nurse or some other person by whom the infant may have been kept. Where the child has secondary symptoms of syphilis, the disease probably has been entailed by its parents.

A VIEW

OF THE

FORMER AND PRESENT LONDON PHARMACOPŒIÆ,

TOGETHER WITH THE

SYNONYMS OF THE DIFFERENT COLLEGES.

Names in the former London Pharmacopœia.	Names in the New Pharmacopœia of 1824.	Edinburgh Pharmacopœia.	Dublin Pharmacopœia.
ACIDUM Aceticum	Acidum Aceticum Dilutum	Acidum Aceticum Distillatum	Acetum Distillatum.
Ærugo	Ærugo	Subacetas Cupri	Ærugo.
Alumen Exsiccatum	Alumen Exsiccatum	Sulphus Aluminis Exsiccatus	Alumen Ustum.
Ammoniæ Subcarbonas	Ammoniæ Subcarbonas	Ammoniæ Carbonas	Ammoniæ Carbonas.
Antimonii Tartarizatum	Antimonii Tartarizatum	Tartris Antimonii	Tartarum Antimoniatum.
Arsenic Oxydum	Arsenicum Album	Arsenici Oxydum	Arsenicum.
Arsenici Oxydum Sublimatum	Arsenicum Album Sublimatum.		
CALAMI Radix	Calami Radix	Acorus Calamus Radix	Acari Radix.
Calumbæ Radix	Calumba.		
Ceratum Lythæ	Ceratum Cantharidis		
——— Plumbi Superacetatis	——— Plumbi Acetatis	Unguentum Acetatis Plumbi	Unguentum Acetatis Plumbi.
——— Sabinæ	——— Sabinæ	- - - - -	Unguentum Sabinæ.
Cinnamomi Cortex	Cinnamomi Cortex	Lauri Cinnamomi Cortex	Cinnamomi Cortex.
Confectio Aromatica	Confectio Aromatica	Electuarium Aromaticum	Electuarium Aromaticum.
——— Cassiæ	——— Cassiæ	——— Cassiæ Fistulæ	——— Cassiæ.
——— Opii	——— Opii	——— Opiatum.	
Copaiba	Copaiba	Copaiferæ Officinalis Resina liquida	Balsamum Copaibæ.
Creta Preparata	Creta Preparata	Carbonas Calcis Preparatus	Creta.

Names in the former London Pharmacopœia.	Names in the New Pharmacopœia of 1824.	Edinburgh Phormacopœia	Dublin Pharmacopœia
Cuprum Ammoniatum	Cuprum Ammoniatum	Ammoniaretum Cupri	Cuprum Ammoniatum.
Cuspariæ Cortex	Cuspariæ Cortex	Angustura	Angustura.
Dolichi Pubes	Dolichi Pubes	Leguminis Pubes Rigida	Doliches, Setæ Leguminum.
Elaterii Poma	Elaterii Pepones	Momordica Elaterium	Elaterium.
Emplastrum Lythæ	Emplastrum Cantharidis	Emplastrum Meloes Vesicatorii	Emplastrum Cantharidis.
—— Plumbi	—— Plumbi	—— Oxydi Plumbi Semivitrei	—— Lythargyri.
—— Resinæ	—— Resinæ	—— Resinosum	—— Lythargyri cum Resina.
Extractum Anthemidis	Extractum Anthemidis	Extract. Florum Anthemidis Nobilis	Extract. Florum Chamæmeli.
—— Conii	—— Conii	Succus Spissatus Conii Maculati	Succus Spissatus Cicutæ.
Ferrum Ammoniatum	Ferrum Ammoniatum	Murias Ammoniæ et Ferri	Murias Ammoniæ et Ferri.
Ferri Carbonas	Ferri Subcarbonas	Carbonas Ferri Precipitatus	Ferri Carbonas.
—— Sulphas	—— Sulphas	Sulphas Ferri	Sulphas Ferri.
Filicis Radix	Filicis Radix	Polypodium Filix Mas. Radix	Filix Mas. Radix.
Granati Cortex	Granati Cortex	Punica Granatum	Granatum, Pericarpii Cortex.
Hydrargyri Nitrico-Oxydum	Hydrargyri Nitrico-Oxydum	-	Oxydum Hydrargyri Nitricum.
—— Oxydum Cinereum	—— Oxydum Cinereum	Oxydum Hydrargyri Cinereum	Pulvis Hydrargyri Cinereus.
—— Rubrum	—— Rubrum	-	Oxydum Hydrargyri.
—— Oxymurias	—— Oxymurias	Murias Hydrargyri	Murias Hydrargyri Corrosivum.
—— Submurias	—— Submurias	Hydrargyri Submurias	Submurias Hydrargyri Sublimatum.
Jalapæ, Radix	Jalapæ, Radix	Convolvulus Jalapæ, Radix	Jalapæ, Radix.
Infusum Lini	Infusum Lini Compositum.		
—— Rosæ	—— Rosæ Compositum.		
—— Sennæ	—— Sennæ Compositum.		
Lapis Calcarius	Marmor Album.		
Linimentum Ammoniæ Fortius	Linimentum Ammoniæ Fortius	Oleum Ammoniatum	Linimentum Ammoniæ.

Names in the former London Pharmacopœia.	Names in the New Pharmacopœia of London.	Edinburgh Pharmacopœia.	Dublin Pharmacopœia.
Linimentum Camphoræ - -	Linimentum Camphoræ -	Oleum Camphoratum - -	Oleum Camphoratum.
L[illegible] Antominii Tartarizati -	Vini Antominiio Tartarizati -	Vinum Tartritis Antomonii	
—[illegible]s - - -	Liquor Calcis - - -	Aqua Calcis - - -	Aqua Calcis.
—— Plumbi Acetatis - -	—— Plumbi Subacetatis -	- - - - -	Liquor Subacetatis Lithargyri.
—— Dilutus -	—— Dilutus	- - - - -	—— Compos.
I[illegible] Potassæ - - -	Liquor Potassæ - -	Aqua Potassæ - -	Aqua Kali Caustici.
Lytta - - - -	Cantharis - - -	Meloe Vesicatorius - -	Cantharis.
		- - - - -	
Magnesiæ Carbonas - -	Magnesiæ Sucarbonas - -	Magnesiæ Subcarbonas -	Magnesia.
Mistura Amygdalæ - -	Mistura Amygdalæ - -	Emulsio Amygdalæ Communis -	Lac Amygdalæ.
—— Camphoræ - -	—— Camphoræ - -	—— Camphorata - -	Mistura Camphorata.
—— Cornu Usti - -	—— Cornu Usti - -	- - - - -	Decoctum Cornu Cervini.
—— Cretæ - -	—— Cretæ - - -	Potio Carbonatis Calcis	
121 Mucilago Acaciæ - -	Mucilago Acaciæ - -	Muc. Mimosæ Niloticæ -	Muc. Gummi Arabici.
Oleum Juniperi - -	Oleum Juniperi - - -	Ol. Volatile Juniperi Communis -	Oleum Baccarum Juniperi.
—— Terebinthinæ - -	—— Terebint[illegible]æ Rectificatum	Oleum Pini Purissimum -	—— Terebinthinæ Rectificatum.
	—— Tiglii - -		
Pix Arida - - -	Pix Abietina - - -	Pix Burgundica - -	Pix Burgundica.
Plumbi Superacetas - -	Plumbi Acetas - -	Acetas Plumbi - -	Acetas Plumbi.
Potassa Fusa - - -	Potassa Fusa - - -	Potassa - - -	Kali Causticum.
—— cum Calce - -	—— cum Calce - -	—— cum Calce - -	—— cum Calce.
Potassæ Acetas - -	Potassæ Acetas - -	Acetis Potassa - - -	Acetas Kali.
—— Sucarbonas - -	—— Sucarbonas - -	Carbonas Potassæ - -	Subcarbonas Kali.
—— Supertartras - -	—— Supertartras - -	Supertartritis Potassæ Impurus -	Tartarum Crystalli.
—— Tartras - -	—— Tartras - -	Tartaris Potassæ - -	Tartaris Kali.
Pulvis Antimonialis - -	Pulvis Antimonialis - -	Oxydum Antamonii cum Phosphate Calcis - - -	Pulvis Antimonialis.
—— Cinnamomi Compositus -	—— Cinnamomi Compositus -	Pulvis Aromaticus - -	—— Aromaticus.
—— Cornu Usti cum Opio -	—— Cornu Usti cum Opio -	—— Opiatus - -	
—— Cretæ Compositus -	—— Cretæ Compositus -	Pulvis Carbonatis Calcis Compositus	

Names in the former London Pharmacopœia.	Names in the New Pharmacopœia of London	Edinburgh Pharmacopœia.	Dublin Pharmacopœia.
RHEI Radix - -	Rhei Radix - - -	Rheum - - -	Rheum Undulatum.
SODÆ Subcarbonas - -	Sodæ Subcarbonas -	Carbonas Sodæ - -	Carbonas Sodæ.
—— Boras - - -	—— Subboras - -	Boras Sodæ - - -	Subboras Sodæ.
—— Murias - - -	—— Murias - - -	Sodæ Murias - -	Sal Commune.
Soda Tartarizata - -	Soda Tartarizata - -	Tartris Potassæ et Sodæ -	Tartaras Sodæ et Kali.
SPIRITUS Ætheris Sulphuricus -	Spiritus Ætheris Sulphuricus -	Æther Sulphuricus cum Alcohole	Liquor Æthereus Sulphuricus.
——— Camphoræ - -	—— Camphoræ - -	Tinctura Camphoræ - -	
——— Tenuior - -	—— Tenuior - -	Alcohol Dilutum - -	Spiritus Vinosus Tenuior.
TINCTURA Lyttæ - -	Tinctura Cantharidis -	Tinctura Meloes Vesicatorii -	Tinctura Cantharidis.
UNGUENTUM Lyttæ - -	Unguentum Cantharidis -		
——— Nitratis Hydrargyri	——— Hydrargyri Nitratis	Unguentum Hydrargyri Nitratis	Unguent. Supernitratis Hydrargyri.
——— Resinæ Nigræ -	——— Picis Nigræ -		
——— Zinci - -	——— Zinci - -	Unguentum Oxidi Zinci -	Unguentum Oxidi Zinci.

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APPENDIX:

BY DAVID HOSACK, M. D.

Observations on Fever.

From the earliest period to the present day, the subject of fever, more than any other disease to which the human frame is liable, has received the attention of physicians. Yet, looking into our obituaries, we find that fever and febrile diseases still constitute the great outlets to human life, and are at this day almost as fatal as they were in the time of Sydenham, who calculated that fevers, properly so called, make up nearly two-thirds of the diseases which prove fatal to mankind, and that eight out of nine of all who die are cut off by febrile complaints. However minutely, therefore, we may be acquainted with the symptoms of fever in its various forms and stages; however extensive may be our knowledge of its predisposing and exciting causes, we certainly are very deficient in our acquaintance with the *proximate* cause of fever, or its treatment would be more distinctly defined in its various stages, than it appears to be in any of the great practical works that have fallen under our notice. Whence, then, has arisen the discordant, and we may almost say, the *empirical* practice, that fills the pages of the best writers on fevers, and that is even to be found in the truly valuable works of Boerhaave, Cullen, Fordyce, Wilson, and others? We answer; it is in a great degree ascribable to the local views of the animal economy to which some of those writers have been limited by their own hypotheses, and which practitioners, relying upon the authority of great names, have hastily adopted.

Boerhaave's exclusive attention to the *humoral pathology* gave him necessarily but a limited and partial view of the nature of fever, and its operations upon the various parts of the animal economy; he, consequently, neglected all those indications in the treatment that a more extensive view of the *nervous system*, as taken by Hoffman and Cullen, would have pointed out. But his successor, Cullen on the other hand, by avoiding Scylla ran on Charybdis. The nervous system, according to his view, had been too much neglected; but in restoring it to its merited notice, he again, in a great degree, lost sight of all the other parts of the human frame, pronouncing the *humoral pathology* in particular, a creation of the imagination, and, in its application to practice, altogether hypothetical.*

The still more recent writings of Brown, Beddoes, Darwin, Girtanner, Clutterbuck, Rush, Broussais, and others, have been too successful in spreading these partial views of the human structure, and, consequently limited pathology of the diseases to which it is liable. Even the learned and elaborate work of Wilson is calculated to diffuse the same erroneous

* See Preface to his First Lines.

doctrine; nor is the more independent and philosophical Fordyce altogether exempt from this charge, although he professes to be totally guided by facts, regardless of hypotheses. Fever, in the opinion of the writer of these remarks, is a disease of the whole system; it appears no less in all the faculties of the mind than in all the functions of the body; it shows itself in every organ of our frame, and affects every nerve and fibre of the system; the absorbing, the circulating, and excreting systems of vessels, are all affected by it; it shows itself in all the various fluids of the body, as well as in the solids; in a word, it is omnipresent; it has no one pathognomonic symptom, but is constituted by a concourse of symptoms, and these variously combined in the various forms that fever assumes, depending upon the causes whence it proceeds, and the condition of body in which it occurs. If this view of the subject be correct, it will necessarily lead the physician to more extensive principles of practice; it will lead him, at the bed-side of the patient, to pay due regard to the nervous system, the phenomena it exhibits, and the indications thence arising: but at the same time it will lead him to notice the changes which may be induced in the secretions and excretions, and the circulating mass from whence they proceed. We offer these remarks for the purpose of calling the attention of the reader to the too long neglected pathology of the fluids;* at the same time that we invite the attention of the practitioner to some points of practice, not in our opinion sufficiently attended to in the treatment of fever.

The recent experiments of Sir Everard Home, relative to the operation of medicines upon the body, through the medium of the fluids—the communication of diseases from one animal to another, by the transfusion of the fluids, as lately performed by Mr. Colman, at the veterinary school of London; the transmission of diseases from the mother to the foetus in utero;† the analyses of the fluids, both circulating and secreted; the chymical examination of the products of the body as occuring in various diseases, have recently, both in Europe and America, directed the attention of physicians to this neglected part of the human patology.

It is proper here to remark, that, when speaking of fevers, we have in view the continued type of fevers properly so called, not referring to the phlegmasiæ or other pyrexious diseases; yet, in many instances, the principles we wish to inculcate, and the practical deductions thence arising, will be no less applicable in the *typhoid* state of many of the phlegmasiæ and other febrile diseases, than they are to the advanced stage of typhus fever itself.

It will be acknowledged, that fever cannot long continue without inducing debility in the heart and arteries, in common with all the other parts of the system, and that the sensibility to impressions must be proportionably increased. They are, consequently, predisposed to be more readily acted upon even by the natural stimuli of the system; the heart and vessels are accordingly excited to preternatural frequency, even operated upon by the blood and other fluids of the system in their natural and healthy condition, as we see daily illustrated in the progress of all fevers, and in convalescence from fever: we contend that fever, long continued, not only wastes the power of the solids, rendering them more irritable, but by the derangement in the functions and excretions,

* See Dyckman, on the Pathology of the fluids, and the Review of the same Dissertation in the Amer. Med. and Phil. Reg. vol. 4. See also Professor Cooper's Introductory Lecture, delivered in the University of Pennsylvania, in 1818.

† See the Editor's Eassys on various subjects of Medical Science vol. 2 p. 111.

perhaps by the action of the blood-vessels themselves upon their contents, and especially by the retention of those materials which should have been thrown out of the system as noxious, which in health are constantly ejected, the circulating fluids become changed and vitiated, and thereby become additional sources of irritation to the heart and arteries whose susceptibility of impression, as we have just observed, is also morbidly increased. From this view of the more irritable state of the circulating system, and the vitiated state of the fluids, we infer, that unless by some salutary power inherent in the system itself, or by some means suggested by art, the greater irritability of the whole system, and of the heart and arteries, in particular, be diminished, or the morbid changes induced in the fluids they circulate, be counteracted, these causes of fever, mutually operating upon each other, must increase, and fever be continued until the vital principle itself be totally expended. How far, then, we ask, is the attention of physicians directed to these two cardinal objects, in the treatment of the advanced stage of fevers? how far is their practice calculated either to impart vigour to the system, and thereby to lessen the morbid sensibility of the nervous and moving fibre, or to counteract the septic tendency of the circulating fluids which obtains in most fevers of the continued type?

Are we not hereby led to condemn that indiscriminate and long continued use of the *debilitating evacuants*, usually prescribed at this advanced period of fevers and febrile diseases, in as far as they are calculated to add to that waste of excitement, and that very vitiation, to which we have referred? Is not the abstinence, too, usually enjoined by physicians in the typhoid stage of fever, for the same reasons, no less to be reprobated? Are we not lead, upon the same principle, to condemn the prescription of *camphor*, *musk*, *opium*, *digitalis*, and other powerful sedatives, so frequently directed in this stage of fever? We refer to the ordinary mode and quantity in which these narcotics are administered in fevers, by the greater part of practitioners; and who, forsooth, by a strange misnomer, denominate them *stimulants!**

The indiscriminate practice of *purging*, as advised in typhus fevers by Dr. Hamilton† of Edinburgh, is, in our opinion, no less dangerous by the debility it induces, and is not prescribed with sufficient caution by that distinguished practitioner, for whose opinions and practice, on most occasions, we entertain, and beg leave to express, our highest respect. Even the long continued exhibition of the various preparations of mercury and antimony, is, in the opinion of the writer, a no less dangerous and fatal practice in this advanced stage of fever. On the contrary, if the views we have taken be correct, after the indications which arise in the first stage of continued fevers have been fulfilled, in the means of accomplishing which most physicians are agreed; after the necessary evacuations by the lancet and other depleting means have been made, which are frequently called for, both in the invasion and in the progress of fever; after the stomach and bowels have been cleansed, and due regard has been paid to the no less important function performed by the skin, our attention should next be given to the two following objects, and which the practitioner should never lose sight of when the typhoid state of fever has actually arrived; 1st. To preserve the

* For the evidence of the sedate effects of opium, see Dr. Bard's Inaugural Dissertation, Edinburgh, 1765; Monroe's Experiments on Opium: see also the late important observations of Orfila on poisons.

† See his valuable work on the use of Purgatives.

natural power of the system, and carefully to guard against every further waste of excitement; 2dly. By suitable antiseptic nourishment, and other means, including external applications as well as internal remedies, to preserve the circulating fluids from those morbid changes to which they constantly and rapidly tend in all fevers of the continued type, especially in those arising from *contagion*, which, in a peculiar manner, depresses and exhausts the vital powers. In this advanced or typhoid state of fever, characterized by a disturbed state of the brain and nervous system, showing itself in delirium, watchfulness, or irregular and interrupted sleep, frequent sighing and subsultus tendinum, attended with an increased but feeble circulation, hurried and irregular respiration, with its usual consequences, an increased heat of the body and dryness of the surface; characterized also, by a deranged state of the secretions and excretions, exhibiting themselves in an offensive breath, turbid urine, frothy and offensive discharges from the bowels, a foul sordes about the teeth and gums, discoloured lips, and a brown or a black state of the tongue; and, perhaps, added to these, a cadaverous and offensive smell of the whole body; in this condition of the system the means of fulfilling the indications before mentioned, are, 1st. To supply the patient with the most powerful stimuli, both diffusible and permanent; viz. the volatile alkali, æther, wine,* wine whey, porter, yest, bark, Virginia snake-root, bitters, and the mineral acids, preferring each or either of these according to the peculiar circumstances of the case. We are aware that this practice is reprobated by many physicians as improper in this state of excitement, whatever may be the stage of the disease, or the circumstances that may have induced it. This leads us to observe that many physicians are not sufficiently attentive to discriminate between the *simple excitement* of the early stages of fever, which is characterized by the symptoms of inflammatory action, and is kept up by considerable vigour of the system; and the *complicated excitement*, which appears when the powers of life are greatly exhausted, and the disease has been long protracted. A corresponding want of discrimination appears in their practice; they, therefore, condemn in the *last* stage those means of excitement which are injurious in the *first*; and they approve in the last the continuance of the same depleting and debilitating means that have been found useful in the first: what! say they, administer, *wine*, *bitters*, *or bark* in this quickened circulation, attended with a hot and dry skin? We answer, that in such typhoid state of body, in this exhausted state of the vital powers, the remedies that have been enumerated, are among the most effectual means of reducing that very heat of skin, and of diminishing that increased excitement of the whole system, which, as we have before remarked, are frequently ascribable to the morbid sensibility of the heart and vessels to their vitiated contents; and that this sensibility being counteracted, the circulation is necessarily reduced in frequency, the respiration becomes less hurried, and that the heat of the system, which is ever in proportion to the circulation and rapidity of respiration, is consequently diminished.

But, 2dly. We should be no less attentive to the state of the fluids than we are to counteract the morbid excitement of the solids: with this

*The reader will find some pertinent practical remarks on the quantity of wine which may be safely and advantageously administered in this stage and character of fever, in Moore's Med. Sketches, p. 13, 509, 517, &c.

view, attention should be daily given to the bowels for the purpose of evacuating their offensive contents, especially of the lower tract of the intestinal canal; for these malcontents being retained, not only in some instances become the sources of irritation to the intestines themselves, producing diarrhœa, but by their return into the mass of circulating fluids, which are thus rendered still more malignant, they necessarily constitute fresh sources of febrile excitement. Evacuations from the bowels, however, are not to be obtained at that expense of the powers of the whole system, which the means recommended by Dr. Hamilton are calculated to produce; on the contrary, at this advanced period of fever, we should just as readily think of putting a lancet into the patient's arm as emptying his bowels by the active purges he has directed; these, too, with other means of depletion, as far as they may have been indicated, it is presumed have been already attended to in the first stage of the disease. Enemata, or at most, the occasional use of small doses of rhubarb and magnesia, or some other mild aperient, are only, in our opinion, admissible at this period of the disease. For the united purposes of preserving the surface in a perspirable state, of diminishing its temperature when excessive, and of removing the offensive materials which are excreted by the skin and constantly accumulated upon it, the body should be regularly cleansed once or twice in the day, by ablutions of vinegar and water, which should be applied either tepid or cold, according to the temperature of the body;* and should the skin remain dry, after such ablutions have been made, fomentations of vinegar and water applied to the extremities, and steadily persisted in, are among the most effectual means of relaxing the surface, at the same time that they are calculated to allay much of that distressing restlessness which attends this stage of the disease. Upon the same principle of correcting the state of the fluids, the nourishments directed should be exclusively of the *vegetable* kind, as best calculated to resist that putrescent tendency which manifests itself in this state of body; for this purpose, *arrow-root*, *sago*, *tapioca*, *Indian* or *oatmeal gruel*, rendered palatable by the plentiful addition of wine, and some of the most grateful aromatics, should be hourly administered in this exhausted state of the system. The bedding and the dress of the patient, especially if he wears flannel next the skin, which is the preferable clothing in this form of fever, should also be frequently renewed. For the purpose of controlling that restlessness which usually appears in the evening exacerbation, and of procuring sleep, an occasional *anodyne* may, in many instances, be administered, with the most beneficial effects; but the indiscriminate use of opium or laudanum, throughout the day, and through the whole progress of the fever, with a view to their supposed stimulant effects, cannot be too severely reprobated; nor have we ever witnessed the stimulant and salutary effects ascribed to the fashionable *camphorated julep*, and other preparations of camphor, so often had recourse to; but we can indeed say, that we have, in very many instances, witnessed its debilitating, and, as we believe, its fatal effects, in the typhoid state of fever. Such is the practice the author of these remarks has pursued, for many years past, in the typhus fever of this city, the typhoid stage of dysentery, scarlatina, peripneumonia typhodes, and in other febrile diseases; and he can bear the most unequivocal testimony in favour of its safety and success.

*See Currie and Jackson on cold bathing in fevers.

The following extract from a report made to the governors of the New York Hospital, Sept. 1st, 1819, giving a statement of the diseases of that institution, and of the treatment adopted, affords additional evidence of the validity of these opinions.

"During the period of my attendance, an ample opportunity has been afforded to the students resorting to the hospital for instruction, of observing the *typhus form of fever*, which has been unusually prevalent in this city during the last three months, and of noticing the characteristic symptoms of that type of fever as totally distinct from the yellow fever with which it has been identified by many physicians, under the general and fashionable appellation of *malignant fever*. The students have also witnessed the successful use of blood-letting and other evacuations, in the first stage, and of yest, porter, snake-root, the vegetable acids, vegetable nourishments, and frequent ablutions with tepid vinegar and water, in the more advanced stage of that disease, instead of the *mercurial treatment* so generally practised in many parts of the world, and especially in the United States. Indeed, I believe, that the typhus fever of our country owes much of its malignity to the indiscriminate use of mercury. I say its indiscriminate use, for in some cases of fever, and in many other diseases, it is the physician's only resource. Even in typhus fever, under some peculiar circumstances, it has been prescribed with infinite benefit.

"Of the seventy-six cases of fever (of which forty were cases of typhus, attended, in many instances, with symptoms of the highest malignancy) seventy-four have been cured by the means before enumerated, without the prescription of a particle of mercury. *Dysentery*, in like manner, was treated by blood-letting, blisters, emetics, and saline cathartics, and a vegetable diet instead of the customary treatment by calomel. Of twenty-one patients ill of this disease, all recovered or were convalescent at the time I ceased to prescribe Another observation I have frequently made, and which has been verified in the cases that have recently occurred in the hospital, is, that those who are cured without mercury, recover in a much shorter time than those who are treated by the usual mercurial course. This is not all—they not only have a shorter convalescence, but they recover without that injury to the constitution, and that liability to rheumatism and other inflammatory diseases that we frequently observe in those who have undergone the operation of mercury."

During the prevalence of the bilious, remitting, and typhus fevers, as well as in the typhoid termination of other febrile diseases, as they appeared in the New York Hospital in the autumn of 1821, the students of the university of New York have again had an opportunity of witnessing similar successful results of the mode of treatment herein recommended; i. e. in the first stage, by active depletion, by blood-letting, emetics, cathartics, and the usual means of relaxing the skin: and in the second stage, by the use of tonics, stimulants, and vegetable nourishments, at the same time preserving a soluble state of the bowels, and especially a perspirable condition of the surface of the body.

In the treatment of intermittent fevers, the reputation which the sulphate of quinine has recently acquired abroad, has been most amply confirmed by the experience of many distinguished physicians in different sections of the United States I have also found the Peruvian bark in combination with the citric acid more efficacious than any other preparation of the cinchona, save, perhaps, the sulphate of quinine.

The prussiate of iron, is also, an article, upon which, dependence may be well placed.

During my attendance at the New York Hospital in 1822, I prescribed the prussiate of iron, for the relief of patients labouring under the different forms of intermittent fever, cases of which were uncommonly numerous at that time in that Institution. Its medicinal virtues were made known to my class, many of whom witnessed its exhibition in the Hospital. One of the peculiar advantages of this medicine is, that it may be given in every stage of Intermittents. The dose which I have employed has varied from four to eight grains, three or four times within the twenty-four hours. It has never disturbed the stomach, or created nausea even in the most iritable condition of that organ.

Dr. Zolickoffer is the individual to whom we were principally indebted for a knowledge of the medical properties of the prussiate of iron.

Remitting Fever.

Dr. Thomas appears to have adopted the views taken of this subject by Drs. Cullen, Fordyce, and Wilson, who, not personally conversant with the remitting form of fever, consider it to be a mere modification of the intermittent type, ascribing it chiefly to marsh miasma as its cause. and prescribing the same means of treatment as alike applicable to both; whereas in this country, and especially in the southern states, the remittent has many peculiarities in its character, arises from a different cause, and calls for very different, and indeed oftentimes an opposite treatment from that which is indicated in an intermittent. 1. The remittent has not the distinct chill, rigour, and long continued cold stage that announce the intermittent form of fever. Indeed, when forming, the patient is oftentimes affected without the slightest chill, and the disease is slowly and gradually formed. So say Lind, Pringle, Lempriere, Sir Gilbert Blane, Niell, and Pym, who have all contended for the peculiarities of this form of fever. 2. The remittent has a much longer hot stage. 3. The sweating stage is inconsiderable, and indeed is frequently wanting altogether in the remittent. 4. In the remittent there is no perfect apyrexia as after the paroxysm for intermittent. 5. The causes both predisposing and exciting are usually different.

Intermittents for the most part are the effects of marsh miasmata, cold, and moisture. Whereas, remittents ordinarily occur in a vitiated habit of body, arising from neglect of the intestinal canal, bad food, or the effect of exposure to long continued heat, or other debilitating causes, as intemperance, wet and low situations &c ; accordingly it will be found that in most cases of this disease such derangement of the whole system is generally preceded by a disordered state of the digestive organs, evinced by an offensive breath, a foul tongue, covered with a yellow sordes communicating a sense of bitterness to the taste, a torpid state of the liver, and consequently a confined state of the belly; to these causes may be ascribed the tendency in this form of fever to the continued and indeed to the typhus type, and the contagious character which it is apt to assume, especially if active means be not early employed to cleanse the first passages and remove from the system the adventitious causes referred to. Indeed I further remark that in most of the instances which I have seen of long protracted remittents and in which typhoid symptoms have supervened, they have been rendered thus te-

dious and malignant, in consequence of the inert and passive treatment that had been employed in the forming stage of the disease.

Whereas, in those cases in which, after blood-letting where that remedy was indicated had been employed, and the stomach had been cleansed by an active emetic, followed by a saline or mercurial purge, the fever was disarmed of the greatest part of its violence and malignancy and reduced to comparatively a simple type, requiring very mild means to effect an entire and ready solution of the disease.

I could recite numerous cases in which the same attention to the evacuation of the digestive organs by emetics, has obviated such malignancy when the fever had already been of many days' duration.

In addition to the benefits derived from opium, as recommended by the author, it may be observed that no less advantage is frequently obtained from the use of anodynes in preventing the exacerbations of fever in the remittent type than they are in anticipating the paroxysms of an intermittent.

In all instances if they do not prevent the exacerbation, they diminish the violence of the disease, and lessen the sufferings of the patient.

Blisters are also among the most beneficial means of breaking up the returns of fever: like spontaneous eruptions, they probably operate by concentrating the irritations of the system upon the parts to which they are applied, thus converting the general into a local disease.

In some cases where the disease has been rendered unusually obstinate, I have prevented the recurrence of the paroxysm by sailing and the removal of the patient into sea air. A case of this nature, in which life was in jeopardy from the long continuance of the disease, a removal to the sea shore in connexion with the benefits of sailing, was followed by an immediate solution of the fever.

The following letters which I sometime since received from an eminent practitioner, Dr. Norcom of North Carolina, relative to the peculiarities which the bilious remittent assumes in the southern states, and the peculiar treatment which thence becomes necessary, are here introduced as meriting the attention of physicians.

Philadelphia, March 30th, 1810.

Dear sir,

Not having received yours of the 23d instant, until the day before yesterday, I had it not in my power to reply sooner. But I hasten now, as far as time and recollection will serve, to answer some of the more important queries which you have proposed for my consideration. To answer all of them correctly or satisfactorily would require more experience, and a greater talent for observation, than I can boast. However, all that I can distinctly remember relative to the object of which you are in pursuit, I will cheerfully communicate: and, as I presume any opinion or speculation of mine will be as useless as it might be visonary or erroneous, shall confine myself to the relation of such facts and circumstances as have fallen under my own immediate observation.

Edenton, the place of my residence, and the principal scene of my practice for ten years past, is a little seaport town in North Carolina, is situated on the north side of Albermarle Sound, in one of the eastern districts of the state. It is nearly surrounded by a country which is for the most part low and swampy, and in which there is occasionally to be found a great deal of stagnant water, rendered offensive by dead

vegetable matters that decay and putrefy in them during the heato f summer. Our summers, as regards their temperature, are extremely irregular: sometimes being pleasant throughout, and sometimes marked with intemperate heats and sultry weather. The hot weather generally sets in about the last of May, and ends, sooner or later, in the month of September; though we often have some days in April and October that are exceedingly warm. The mercury, in our hottest months, commonly fluctuates between eighty and ninety degrees of Farenheit's thermometer in the shade, if observed at three o'clock in the afternoon. For a few days together it sometimes rises to ninety-two, three, four, five, and now and then as high as ninety-six or seven. Sometimes, on the other hand, for a day or two it will fall to seventy-two, to sixty-eight, six, four, two, and once in a while, below sixty. The greatest degree of heat experienced in this part of the state, takes place generally in June about the solstice; but that which is by far the most disagreeable and oppressive, which is most uniform, and continues longest, occurs in August and the first weeks in September. The same variety is observable in our seasons with respect to rain. Sometimes we have the fervours of summer tempered with regular and refreshing showers; sometimes they are characterized by a succession of gusts or tornadoes, with thunder and lightning, and cataracts of rain; and at other times we have frequent copious distillations every day for weeks together, deluging the country, sweeping away bridges, and drowning our crops in every direction. Then again we have summers extremely dry; insomuch that even the meadows and marshes lose their humidity, vegetation of every kind declines, and the earth presents a surface as parched and dreary as the plains of Hindostan. There is no particular time when rain falls, or is it to be with certainty expected. Sometimes it descends in the greatest quantity in June and July. Sometimes in August and September; but it has always appeared to me that August, taking it altogether, and one year with another, is the driest and warmest of the summer months. In our driest and wettest seasons we are most exempt from bilious fevers of every description, and summers uniformly wet, or uniformly dry, have invariably been remarked in every respect to be the most healthy.

The annual remitting fever of Edenton, and the country in its vicinity, usually begins with the month of August; and I have remarked that the most malignant cases always occur in this month, or during the hot weather of September. As the autumn advances, and the heat decreases, fevers of every grade seem disposed to assume more and more the character of intermittents, which generally conclude the sickness of the season. The remitting fever with us, as far as I have been able to ascertain, is most fatal in seasons tending to dryness, and accompanied with unusual heat. In its character and symptoms it is as various as the circumstances of the climate and season under which it exists. Sometimes persons are seized violently without any previous indisposition, with a chill, or mixed sensations of heat and chilliness, that last for an hour or two, and are succeeded by a severe fever, with pains in the head and back, a full, hard, quick, and bounding pulse, great thirst, a hot and dry skin, hurried respiration, with redness or a muddy suffusion of the eyes, and a disposition to delirium. The stomach, in this form of the fever, does not seem to be affected with much sickness or nausea; yet vomiting is a frequent occurrence, and it is with difficulty that a patient can retain the least particle of food whatever. A sense of heat or burning

is generally complained of, which is very distressing, and occasions every thing to be thrown up that is swallowed if it contain stimulus, or be in any way substantial. The exacerbations of the fever are oftenest quotidian, returning generally in the afternoon, and the intervals short, with an imperfect remission, without sweating, or any considerable abatement of pain. The most successful mode of treating this inflammatory or malignant remitting fever, is by bleeding, purging, emetics, diaphoretics, and diluents, adapted, in quantity and continuance, to the circumstances of the case. The bark is a medicine which here does little or no service : on the contrary, I have known it do much harm, by increasing the troublesome affection of the stomach, which never fails to aggravate the most lenient form of the disease. In this fever we are in the habit of giving bark to remove debility and exhaustion, which are its consequences, but seldom with a view of stopping or curing the disease. Mercury is a remedy to which we are obliged occasionally to resort in the cure : I have never done good with it myself, except in the decline of the fever, after plentiful evacuations.

Another form of remitting fever, which is the true bilious remittent of our climate, comes on with a distinct chilly fit, of greater or less du ration, and is succeeded by the ordinary symptoms of fever, with a frequent, full, and soft pulse, such as may almost always be felt in the paroxysm of an intermittent. It is not accompanied with much acute pain, but great aching and restlessness, nausea or vomiting, with ejections of bile, or matter exhibiting a bilious appearance. The type of this fever is generally that of a double tertain, having an exacerbation one day in the afternoon, the next, in the evening. Its remissions are more distinct than those of the inflammatory remittent : it seldom requires bleeding ; and after the exhibition of proper intestinal evacuants, invariably yields to the bark. It is rarely fatal, and when it is, seldom terminates in less than from ten to sixteen or seventeen days. Towards its close it sometimes puts on the garb of typhus, and does not end in death, or a recovery, in less than from twenty to thirty days. The fever last described is that which we usually meet with, which affects the greatest number of persons at a time, and is the least mortal of any of our continued fevers. Neither the inflammatory nor the bilious remittent, is very fatal ; the former, however, is much the more so, in the proportion I should suppose of at least three to one. It either ends fatally in from four to eight or nine days, or favourably somewhere between the eighth and thirteenth, but is not unfrequently protracted to a later period : the fatal issue generally occurs early in the disease.

The tongue in the bilious remittent is commonly furred and yellow ; the skin likewise exhibits a yellow hue, which increases as the fever progresses : whereas in the inflammatory remittent, the tongue exhibits the common febrile fur in most cases without yellowness, and the skin is hardly ever discoloured until about the close of the complaint. In two or three instances I have known the surface of the body to turn yellow soon after death, from the inflammatory remittent, when not the smallest discolouration had been observed before. The vomiting in one of these fevers, or forms of fever, (which you please,) is different from that which attends the other : In the first it occurs with little nausea, or sickness ; is seldom attended with bilious discharges ; affords scarce any relief, and is always increased by bark and stimulants. In the last it is preceded by great nausea, attended with large discharges of bile, gives the patient relief, and is very often to be removed alto-

gether with bark, aromatics, and cordial drinks. Hemorrhages very rarely occur in either of these fevers; at least, they have seldom occurred in my practice. In a case or two I have seen blood effused from the gums, though, in which form of the disease, I do not now recollect. In a few days I hope I shall have leisure to furnish replies to your other questions, which I will certainly do very soon. In the mean time, with the best wishes,

I am, yours, &c.

JA. NORCOM.

DR. DAVID HOSACK.

Philadelphia, April 8th, 1810.

Dear sir,—Most of the questions you proposed to me in your letter of the 23 ult. I endeavoured to answer in my first reply. Some of them however, have been neglected; but shall be referred to, if not fully answered, in the additional remarks I have now to offer.

Respecting the utility or efficacy of emetics in our remitting fever, I presume a few words will suffice, after what has been said already. In the inflammatory remittent, attended with burning heat and oppressive anxiety about the precordia, neither spontaneous nor artificial vomiting appears to do good; the first does not often occur, and when it does, affords no relief; the last is seldom practised, and when it is, bile is not commonly discharged, or the patient materially relieved by the operation. On the contrary, emetics, in many cases in which I have prescribed them, or known them exhibited, have increased the affection of the stomach, and exasperated the symptoms of the disease to such a degree, as to induce a determination in my mind never to give them again in this particular form of it. In the bilious remittent, vomiting is a remedy of the utmost importance, and, if had recourse to in the beginning of the disease, never fails to do great service. Here, likewise spontaneous vomitings, though they sometimes go to excess and do mischief, are generally serviceable. The two grades, forms, or species of fever which I have described, are rarely found to prevail extensively at the same time or season of the year.

During the prevalence of the bilious remittent, we now and then meet with cases marked with the symptoms, and requiring the treatment of the inflammatory remittent; and they occur with us at least, principally among strangers, more especially the natives of the northern and eastern states. But the position will hardly bear to be reversed; for I have generally observed, that during the prevalence of an inflammatory remittent, though we sometimes see cases that are considerably bilious, symptoms of inflammatory diseases almost invariably attend, and call for the use of antiphlogistic remedies. From the bilious remittent of Carolina, no age, sex, constitution, nor condition is exempt. To the inflammatory remittent, the young, the robust, the plethoric, and strangers, are peculiarly subject; and these last are oftenest the victims of the disease. Both these forms of fever are most severe and fatal, as I think I remarked before, about the latter end of summer or the beginning of autumn: that is, in proportion to the number of persons affected; yet from the much wider prevalence of their milder grades in the variable weather of autumn, the absolute number of deaths will, upon the whole, sometimes be the greatest in

this latter season; and hence it is, that strictly speaking, when we have the most sickness, we have comparatively the least mortality.

I am not quite certain that I have ever seen the black vomit in any of our endemic fevers; but a vomiting of black matter of various descriptions is no unfrequent occurrence. In 1799, when we had a true yellow fever in Edenton, I saw the genuine black vomit in several cases: but I do not believe I have ever seen exactly the same thing since: though I confess I have seen perhaps half a dozen cases in which my suspicions have been strongly excited. Hemorrhages from the nose and gums are occasionally met with in protracted cases ending fatally; and I remember one case of a malignant nature, in which a bleeding from the mouth took place, that ended in death in three or four days. Glandular swellings, so far as my observation has extended, have not been among the characteristics of any of our fevers. In most of the fatal cases of inflammatory remitting fever which have fallen under my notice, the heat of the skin has continued intense until a short time before dissolution, and the patient has expired in a paroxysm or exacerbation of fever. The bilious remittent, when about to prove mortal in a majority of instances, puts on the garb of typhus, and terminates with the symptoms common in the last stage of that disease.

I have thus, Sir, given you an account of two forms of fever, as they appear in the tract of country to which my practice has been confined; and all the continued remitting, or what are usually denominated bilious fevers, incident to our climate, seem to me to be only modifications, or variations of these two original and distinct diseases. Neither the inflammatory nor the bilious remittent always attack and progress precisely as in the history I have sketched. They both vary in their modes of attack, in duration, in violence, in the remissions and exacerbations that attend them, and in many of their less essential symptoms. Nevertheless, I feel persuaded that, from the description I have given, the peculiar and distinguishing character of each will be sufficiently manifest.

Very respectfully,

Ja. Norcom.

Dr. David Hosack.

Infantile Remittent Fever.

To this disease the attention of practitioners was long since directed by the valuable publication of Dr. Butter. Recently, by the excellent practical observations on the same subject, by Mr. Coley, the profession has again been called upon to notice this form of fever; which, although of daily occurrence, and frequently fatal in its consequences, has not been sufficiently regarded by physicians.

In this country, as I was early taught by my preceptors, Doctors Rush and Kuhn, and as I have witnessed in my own practice since the year 1791, the remittent fever of children, if we except croup, pneumonia, and the diarrhœa attendant upon teething, is more frequently met with than perhaps any other disease of infancy or childhood.

Nor is the infantile remittent confined, as observed by our author, to children under six years of age; but is oftentimes met with between that period and the twelfth year.

As in the bilious remittent of adults, it may be remarked of the infantile remittent that it is very generally traceable to a derangement of the digestive organs as its primary seat and source. This is evinced by the loss of appetite, the foul tongue the offensive breath, and the confined state of the belly, in the forming stage of this disease, and which are generally considered as the evidence of worms, and treated accordingly.* These symptoms in a few days are succeeded by those of fever, which is of very uncertain duration and violence, and not unfrequently displays itself either in irritation of the chest, producing oppressed respiration and cough, resembling pneumonia, or upon the brain, followed by the evidences of phrenitic inflammation, and ultimately terminating in hydrocephalus internus. This last termination, such is the natural tendency and force of the circulation upon the brain at that early period of life, may very generally be anticipated, if active means be not early employed to empty the stomach and intestines; and to unlock the surface of the body by warm bathing, the free use of antimony, and other diaphoretics; or by blisters, to create a new and relatively safe seat of irritation upon which the febrile symptoms may expend themselves. Indeed so constantly is hydrocephalus the sequel of other febrile diseases, that it may, with very few exceptions, be considered as exclusively symptomatic. I have even known pneumonia to be its forerunner. Teething is frequently productive of fever, ending in phrenitis and hydrocephalus; and I believe, as already intimated in another place, the arterial excitement occasioned by the use of mercury, so frequently and indiscriminately given in the diseases of children, has been a prolific parent of this fatal malady; and which has oftentimes been remarked to have greatly increased in frequency and mortality, since the very general prescription of that metal. In as far, therefore, as increased arterial excitement of long continuance, whatever may be its type or its source, has a peculiar tendency to oppress the brain at this period of life, the same consequence is to be apprehended from the form of fever under consideration; and, on this account, not only calls for the most active means of obtaining a solution of such fever, but, in an especial manner, suggests the employment of such remedies as are calculated to divert the current from the brain to other parts of the system. When, therefore, in the progress of fever, the brain begins to manifest inordinate irritation, either by pain, or by stupor, blisters to the extremities, and active cathartics, viz. an infusion of senna, manna, and cream of tartar, frequently administered until plentiful evacuations are obtained, are among the most effectual means of arresting the progress of the fatal train of symptoms now to be apprehended. I notice, particularly, the infusion of senna, having administered it in many cases of approaching hydrocephalus with the most decided advantage.

Contagion.

In a communication which I addressed to the late Dr. Colin Chisholm of England, in July 1808, containing the result of my observations on the controversies relative to contagion, I ventured to pronounce it a dispute more about words than facts.

* See observations on worms, Appendix.

The abuse of the terms *contagion* and *infection*, and the neglect of writers in not annexing to them a precise definition of the manner in which they severally employ them, have, I believe, been the source of the medical warfare relative to the contagiousness of yellow fever, and some other diseases: *e. g.* the greater number of medical writers enumerate, in the list of contagious diseases, all those which are in any way communicable from one person to another, whether by *contact*, *fomites*, *atmosphere*, *&c.* without designating the *circumstances* attending these several modes of communication.

Lind, in his papers on contagion and infection, (which he considers as synonymous terms.) is guilty of this error, in which he has been followed by most writers upon the subject of fever, &c. The late Dr. R. Bayley, in his account of the yellow fever which prevailed in New York in 1795, proposed a distinction between *contagious* and *infectious* diseases. He made use of the first term to denote such as are communicated under any circumstances of atmosphere, whether pure or impure, as small pox, measles, &c. *Infectious* diseases he denominated those which are communicated in consequence of an impure or vitiated state of the atmosphere: *i. e.* that the *impurities* of the atmosphere communicate the disease, not that the air contains any *specific material* derived from the patient, except such as may be occasioned by the want of cleanliness, This distinction, proposed by Dr Bayley, is, in my opinion, an approach nearer the truth than any of his predecessors have advanced, but it does not present us with a view of the *whole truth* upon the subject. The visiter or attendant contracts disease from one of *two sources*, either from the filth of the sick room, or from a *specific something* issuing from the body of the sick, the consequence of the peculiar disease under which he labours. If a person visiting another ill of the *yellow fever* or *plague*, derives his disease from the *impure atmosphere* of the apartment, I ask how it happens, that in all instances he contracts the *same disease* with that of the person whom he visits? Why is his disorder not an *intermittent*, a *remittent*, *jail fever*, or *dysentery*, which are considered the usual produce of filth? If he derive any thing specific from the sick, his disease is then assuredly not to be considered as occasioned by the *atmosphere*, but depending on the *peculiar condition of the fluids*, or state of the system, induced by the action of a specific poison; in other words, it is to be considered a *contagious* disease. The distinction proposed by Dr. Bayley, inasmuch as it does not account for the communication of the *peculiar form* of fever or disease which is thus propagated, I, therefore, consider to be insufficient to account for the circumstances attending the communication of those diseases to which it is applied. That I may not be misunderstood, I will suppose A to be ill of *dysentery* a disease well known to be attended with a *peculiar train of symptoms*; he is in a small, confined apartment, his person is neglected, the atmosphere around him is rendered impure and offensive; under these circumstances B visits him, and a few days after is also taken sick with the *same disease*, attended in all respects with the *same* dangerous symptoms which characterize the disorder of A. Dr. Bayley, and those who adopt the doctrine of *infection* as opposed to *contagion*, consider the disease of B to proceed from the *impurities of the chamber*, and not from any thing *peculiar* emanating or secreted from the body of A. But as we may, without hazard, visit an equally filthy chamber where C lies ill of *cholera morbus*, or D with a *broken limb*, I therefore ascribe the disease of B to something more than the

impure air of the chamber of A. I ascribe it to a *peculiar virus* generated in his system by the disease under which he labours, and communicated by his excretions to the surrounding atmosphere, rendering it thus capable of producing the same disease in those who may be exposed to its influence.

The communication of this virus from the sick to the well, in whatever form it may be conveyed, as uniformly produces the *same disease* as *inoculation* excites the *small-pox*, or *vaccination* conveys the *vaccine virus*. So far, then, there is something in *common* in the communication of contagious or infectious diseases, which should be accordingly expressed in the language we employ—some of those diseases are conveyed in one form, others in a different; we should then be equally careful to mark those circumstances in which they *differ*, as well as those which they possess in *common*.

Such an arrangement appears to me not only practicable, but, at the same time, calculated, in some degree, to harmonize the differences of opinion which now separate the contagionists and non-contagionists. Under these impressions, I propose to arrange those diseases which are communicable from one to another under three heads. First, those which are communicated *exclusively* by *contact*. In this class I enumerate

The Itch	Elephantiasis, or Leprosy,
Syphilis,	Hydrophobia, and
The Lan da of Africa,	The Vaccine virus.
Framboesia, or Yaws,	

Neither of these diseases can be communicated in any other way than by *contact*; they are, therefore, *contagious* diseases in the strict etymological sense of the term. It is also to be remarked, that these diseases are never conveyed through the medium of the *atmosphere*; actual contact alone can communicate them from one person to another.

These diseases, acknowledged by all to be contagious, and so denominated by all writers, have a law of communication peculiar to themselves. But there is a second class of diseases also considered as contagious, which are communicated under different circumstances, governed in this respect, by different laws of communication.

Those to which I now allude are such as are communicated both by *contact* and by the *atmosphere*. In this class I arrange

Small-pox,	Hooping-cough,
Measles,	Scarlet fever, and
Chicken-pox,	Cynanche maligna.

Contact, or the *close approach* to the sick, labouring under these diseases, will communicate them to those who are susceptible of their influence—but they are no less communicable through the *medium of the atmosphere*. A *second law*, which governs the communication of this class of contagious diseases, is, that they are communicable in every season, in the heat of *summer*, as well as in the cold of *winter*—in a *pure* as well as in an *impure* air, though more readily by the latter than the former. A *third law* of communication in this class of diseases, is, that the persons afflicted with them are not generally susceptible of a second attack. I say *generally*, because exceptions are related upon very respectable authority.

This second class of contagious diseases is, therefore, abundantly distinguished from the first; but they are still associated by most medi-

ical writers under the same head of contagious diseases, without assigning to each class its discriminating characters.

The same want of discrimination has, in my opinion, occasioned the numerous disputes among physicians relative to the contagiousness and non-contagiousness of those fevers which I enumerate as the *third class* of diseases that are communicable from one person to another. Under this head I arrange

Plague,
Yellow fever,
Typhus, *jail, ship, hospital, or lake fever, and*
Dysentery.

These diseases are only, in general, communicable through the medium of an *impure* atmosphere: in a pure air, in large and well ventilated apartments, when the dress of the patient is frequently changed, all excrementitious discharges immediately removed, and attention paid to cleanliness in general, these diseases are not communicated, or very rarely so from one to another. But in an *impure* air, rendered so by the decomposition of animal and vegetable substances, as takes place in low marshy countries, or by concentrated human effluvia, as in camps, jails, hospitals, or on shipboard, they are rendered not only extremely malignant and mortal in themselves, but become communicable to others who approach the sick, or breathe the same atmosphere, which has become *assimilated* to the poison introduced, insomuch that *the same specific disease* is communicated, whether it be the *plague, yellow fever, typhus, or dysentery.*

Hence we account for the fact stated by Sydenham and other writers on epidemics, that the prevailing disease swallows up all other disorders, *i. e.* that during the prevalence of an epidemic plague, typhus, dysentery, or other diseases of this class, every indisposition of a febrile sort readily assumes the character of the prevailing disorder. We know this to be experienced in the diseases of other countries, and we see it daily exemplified in our own: both in our cities and in the country towns, when, after heavy showers of rain, and the action of a hot sun, a decomposition of vegetable and animal substances takes place, and dysentery or typhus fever is produced, it assimilates the air to itself, whatever may be the acting poison. But under other circumstances of weather and season, the disease thus originating from some local circumstances, or from a peculiar habit of body in the person so affected, does not extend beyond the family in which it first occurred, or, perhaps, the individual in whom it originated.

This class of diseases, therefore, like the former, has a law peculiar to itself: *i. e.* the diseases composing it are communicable, or otherwise depending upon the *condition of atmosphere* in which they occur or are introduced—whereas those of the second class are conveyed from person to person, through a *pure* as well as an *impure* medium: but they also are rendered more virulent and malignant in an atmosphere charged with miasmata, than in that which is free from such ingredients.

It is also, I believe, generally true of the diseases of the *third class,* not perhaps excepting the *plague* and *yellow fever*, that they may be taken a *second time*. This has been advanced by the advocates for the domestic origin of yellow fever, as an argument against the contagiousness of this disease.

But, upon the same principle, they must deny the contagiousness of all those disorders which I have enumerated in the *first* class, as *itch*, *syphilis*, *&c.* for most of them are also to be taken a second time ; yet they are acknowledged by all to be *contagious diseases*. In the same manner many persons make the *small pox* a standard, and conclude that yellow fever is not contagious, because it is not communicated under the same circumstances of atmosphere and season, and governed by the same laws with that disease.

They might with the same propriety conclude, that the *scarlet fever* is not contagious, because it is not attended with the pustules of small pox. This teaches us the importance of correct language to convey the several degrees of contagion which have been noticed : and that, while we may make use of the terms now in use, we should annex to them such explanations as will convey those different laws of communication which have been enumerated. With these precautions in the use of the language we employ, I believe, the contagionists and non-contagionists will find themselves very much in the situation of those theologians of whom Pascal speaks, and ready to adopt the expression of one of them, when he observes, " La difference qui est entre nous est si subtile, qu'à peine pouvons nous la marquer nous memes."

We would then be ready to admit, that the yellow fever is a contagious or communicable disease, in an *impure* atmosphere ; but not generally so where the air is preserved pure and free from noxious materials. This doctrine too, I believe, will better account for the apparently contradictory facts, which have peen urged by the advocates of the two opposing opinions, than any system that has been adopted.

It will also lead to a system of police regulations, which will best insure us against the ravages of yellow fever when introduced ; at the same time it will teach us carefully to guard against the introduction of it from abroad.

In 1809, Dr. Chisholm did me the honour to reply to the foregoing observations, expressing his entire approbation of the two first classes, but objecting to the third. After enumerating his several objections, he requests me to reconsider my third division, which appears to him to be the only objectionable one. This I have done, and now submit the result of a further examination of this subject, and a detail of the facts by which I have been led to my conclusion relating to the laws of communication which I have more particularly assigned to the febrile diseases enumerated in the third class.

Waiving for the present all inquiry relative to the nature or properties of the contagious principle secreted by the diseased body, or the chymical qualities of the atmosphere deemed necessary for its propagation, or the manner in which the contagion diffuses itself, I proceed to observe that the history of each disease enumerated in the third class, viz. *plague*, *dysentery*, *typhus*, in all its forms, and *yellow fever*, furnishes evidence of the correctness of the remark, that they are governed by a law peculiar to themselves, that they are contagious or communicable in a *foul* atmosphere, but that they are never or very rarely so in a *pure* air, where the sick enjoy the benefits of cleanliness and ventilation.

The same evidence, I trust, will demonstrate another truth, that these diseases are, in no instances, *epidemic*, as they have been improperly denominated by most practical writers, but that their sphere of operation is, with very few exceptions, confined within the limits to which

the vitiated atmosphere extends, in which they may be engendered, or into which they may be introduced: and that, in this respect, they differ from ordinary epidemics, "which appear in different and distant parts of the same place, and at the same time."

That the plague when once generated, whatever may be the sources whence it derives its origin, is communicated by a peculiar virus secreted by the diseased body, will not, I trust, be questioned at this day. Independently of the facts contained in the writings of Thucydides, Lucretius, Mead, Dr. Patrick Russel, and others, showing the contagious nature of the plague, the communication of this disease by inoculation, as performed by Matthias Deggio.* Dr. Whyte,† and the Russian surgeon, noticed by Sonnini,‡ have recently established the fact of its propagation by a specific secretion beyond all possible controversy.

It has been observed by Assalini, that Dr. Desgenettes, while in Syria, had in vain endeavoured to inoculate himself with the virus of the plague; and by the same writer it is incorrectly added, that Dr. Desgenettes made the experiment under the persuasion that the disease was not contagious; but from the account of the facts as stated by Dr. Desgenettes himself, it appears that the experiment was not made under that persuasion. On the contrary, he expressly declares, that its contagiousness was demonstrated by a thousand examples, and observes, contrary to the opinion of many, that the same person was liable to a second attack of it, as was the case with the convalescents whom he employed to attend upon the sick: furthermore, it appears from his own account, that he inoculated himself with the matter taken from a person who had the disease in its mildest form, what he denominates the first degree; in which the fever was slight, and the patient easily and promptly cured. Dr. Desgenettes adds, that it was an imperfect experiment, and that it does not disprove the communication of the disease by contagion, and that he made the experiment for the purpose of quieting the fears of the French troops, and of inspiring them with confidence.§

But that the plague, in common with the other diseases I have associated with it, is only communicable through the medium of an impure or vitiated atmosphere, is an opinion which, although it has never been attended to by physicians, will be found to be verified by every writer on this disease. The plague of Athens, the first of which we have any authentic or satisfactory account, furnishes evidence of the truth. Whether that disease originated in the city of Athens, or was introduced into it from Æthiopia, the fact is established, that the circumstances under which it appeared in that city were peculiarly favourable to its diffusion. It appeared, according to Thucydides, in the beginning of the summer season, and first of all at the Piræus, the port and harbour of Athens, from whence it spread with increasing mortality into the upper part of the city. It appeared, too, at a time when Athens was so crowded with those who had fled thither from the adjacent country of Attica for safety from the invading armies of the Peloponnesians and their allies, that many of them were forced to lodge themselves within the turrets of the walls, or wherever they could find a vacant corner. "The city,"

* See Med. Com. vol. 8. p. 349.
† See Wilson's Expedition to Egypt, and M'Gregor's Sketches.
‡ See Travels into Greece and Turkey, p. 497.
§ See Essays on various subjects of Medical Science, by David Hosack, M. D. vol. 1. p. 322. Note B.

says the historian, "was not able to receive so large a conflux of people:" "afterwards the long walls, and a great part of the Piræus, were portioned out to them for little dwellings; at the same time, too, the Athenians were fitting out at the Piræus, a fleet of one hundred ships to infest Peloponnesus." Even the Pelasgic, a hitherto vacant spot of ground below the citadel, which it was thought profaneness to occupy, and the settlement of which the Pythian oracle had specially prohibited, they were constrained, by urgent necessity, to turn into a dwelling-place. By this influx from the neighbourhood of Athens, its number of inhabitants, as stated by a late writer, was suddenly increased from fifty thousand to more than four hundred thousand persons.* In another place, Thucydides observes, "Those who had come in from the country, had no houses, but dwelled all the summer season in booths, where there was scarcely room to breathe;" he adds, "The pestilence destroyed with the utmost disorder, so that they lay together in heaps, the dying upon the dead, and the dead upon the dying." Even in the public streets, some were tumbling one over another, or lay expiring round about every fountain, whither they had crept to assuage their immoderate thirst; the temples, too, in which they had erected tents for their reception, were full of the bodies of those who had expired there. Thucydides proceeds, "In a calamity so outrageously violent, things sacred and holy had quite lost their distinction; all regulations observed before in matters of sepulture were quite confounded, since every one buried wherever he could find a place." He also observes, "it raged the most, and for the longest time, in Athens, but afterwards spread into the other towns, especially in the most populous, but never extended itself to Peloponnesus." We are told by the same historian, that "at the siege of Potidæa, which took place during the same season, the plague followed them even thither, and, making grievous havock among the Athenians, destroyed the army; and that even those soldiers that had been there before, and had, from the beginning of the siege, been in perfect health, caught the infection from the troops brought thither by Agnon. After a stay of forty days, having, in that time, lost one thousand and fifty out of four thousand men, he returned with his ships to Athens."†

With these facts before us, the season of the year in which the plague made its first appearance, the part of the city in which it commenced, the multitudes which crowded into it, and those, too, unaccustomed to the air of the town, having been habituated to active employment in the pure air of the country, the impure state of the atmosphere necessarily resulting from this condition of things, combining the evils both of pestilence and war; the disease itself being confined within the walls of the city, while, at the same time, it never extended itself to the neighbouring country, not even to the contiguous towns of Peloponnesus and Bœotia, we are led to the conclusion, that an impure atmosphere is the vehicle or medium by which this disease is propagated.

The circumstances attendant upon the plague, as it has appeared at different periods in the city of Rome, are no less demonstrative of this truth. I will only notice the more remarkable visitation of this disease which took place in the year of Rome 290, and four hundred and sixty one years before Christ. "This," says Livy, "was a season of great

* Medical Repository, vol. 1. p. 16.
† Smith's Translation of Thucydides, vol. 1. p. 153.

distress; for during this year a pestilential disorder spread itself not only through the city, but over the country, affecting both men and cattle with equal malignity; the violence of the disorder was increased by admitting into the city the cattle and the inhabitants of the country, who fled thither for shelter from the enemy's ravages: such a confused collection of animals of every kind suffocated the citizens by the unusual stench, while the country people, crowded together in narrow apartments, suffered no less from the heat, the want of rest, and their attendance on each other; besides, even contact served to propagate the infection."* Baker's Livy.

Dionysius of Halicarnassus mentions† that the disease seized studs of mares, herds of oxen, and flocks of goats and sheep, doubtless denoting that this disease was remarkably fatal to those animals when collected in numerous bodies. Orosius, in his account of the same pestilence, observes, "Many of the patricians were victims, but it was most fatal to the poor."‡ Livy also has a similar observation, that many illustrious persons died, but that among those of inferior note the virulence of the disorder spread its ravages wide.

The history of the pestilence of modern times, the accounts of which are more minutely and satisfactorily detailed, no less proves that this disease, when once introduced, spreads its devastation by means of a vitiated atmosphere, more especially where such vitiation proceeds from confined human effluvia. Accordingly, in the plague of London, in 1665, at which time nearly one hundred thousand persons perished, we are told by Hodges, that while the better sort of people had various resources to avoid the dreadful consequences of this fatal distemper, it was entirely confined to the poor, insomuch that some gave it the name of the *poor's plague*.

The rich, says Mr. Howard, are less liable to the plague than the poor, both because they are more careful to avoid infection and have larger and more airy apartments, and because they are more cleanly, and live on better food, with plenty of vegetables; and this I suppose is the reason why protestants are less liable to this distemper than catholics during their time of fasting; and likewise, why the generality of Europeans are less liable to it than Greeks, and particularly Jews. He adds, I have heard of instances of *servants* in European families, who, through imprudence and carelessness, have been attacked with the plague, while the rest of the family escaped it.§

We are told by Diemerbroek, that it was a common practice in Italy and France, when the plague appeared in any large town, to drive out the poor immediately; so fully were the magistrates convinced that the disease was preserved and propagated by them. Upon the same principle, at the commencement of the plague at Marseilles, all beggars were ordered to quit the town.‖ "Indeed," says Dr. Blane, "it is a general remark in the history of all plagues, both in Asia and Europe, that they break out and prevail only among the lowest and poorest

* Grave tempus et forte annus pestilens erat urbi, agrisque, nec hominibus magis quam pecori: et auxere vim morbi tenore populationis, pecoribus agrestibusque, in urbem acceptis. Ea colluvio mixtorum omnis generis animantium, et odore insolito urbano set agrestem confertum in arcta tecta, æstu ac vigillis angebat, ministeriaqe in vicem ac contagio ipsa vulgabant morbos. Tit. Lib. 3. c. 6.

† Lib. 10. ‡ Lib. 2.

§ Account of Lazarettos, p. 25. ‖ Ferriar's Med. Hist. and Reflect. vol. 1. 287.

ranks of people, never becoming epidemic among the better sort."* When the plague was last in England, upon its first entrance into Poole, in Dorsetshire, the magistrates immediately suppressed it by removing the sick into pest houses without the town.†

Lord Clarendon, in the history of his own life, relates, that when he and other people of condition, who had fled from the plague, returned to London, they hardly missed one of their friends or acquaintances, the mortality having been confined almost entirely to the lowest orders of the people. "At that time, the streets of London," says Thornton, "were narrow, crooked, and incommodious, the buildings chiefly of wood, dark, close, and ill contrived, and by the several stories projecting beyond each other as they rose over the narrow streets, the circulation of the air was almost entirely obstructed. To these inconveniences, he adds, may in some measure be attributed the destruction which had been repeatedly made in the city by the visitation of the plague; for as the air was confined, so the noisome vapours and pestilential atoms were harboured and nourished. Though the destruction of London by the great fire in the succeeding year (1666) occasioned great temporary distress, yet, in the end, it proved of the utmost utility; for, by the rebuilding of the city, and the enlargement of the streets, the free circulation of air was admitted, the offensive vapours expelled, and the city freed from all pestilential disorders."‡ It is also stated by Dr. Hodges,§ that at the breaking out of this plague, the city was unusually full of people; he supposes that there must have been upwards of one hundred thousand persons more than usual in the city; and according to Dr. Baynard, during the progress of this merciless pestilence, there was such a general *calm* and *serenity of weather*, as if both wind and rain had been expelled the kingdom, and that for many weeks together not the least breath of wind could be discovered.

It is also worthy of remark, that the city of Oxford, to which the parliament was removed during the prevalence of the disease, remained uninfected; which exemption is ascribed, by Dr. Plott, to the draining and greater cleanliness of that city.‖

The great plague with which Marseilles was visited in 1720, and which destroyed upwards of sixty thousand of its inhabitants, presents us with a detail of facts which leads to the same conclusion. This disease, it is well ascertained, was introduced from the Levant by a ship which arrived at Marseilles from the coast of Syria. It appeared first among the sailors of the suspected ship; it was next taken by the porters engaged in opening and airing the merchandise in the Lazaretto; it was then introduced into the city, and spread among the poor, and first of all in a street which was only occupied by the lower class of people.**

In the commencement of the disease, Bertrand remarks, none but children and poor persons were attacked by it.†† In a short time it extended to the neighbouring streets; it was also conveyed into the Hotel Dieu, by a person received as a patient from the street where the distemper first broke out; two of the nurses and the matron of that institution first died of the disease, when the infection spread with great

* Diseases of Seamen, 3d ed. p. 622.
† Robertson's Med. Police, vol. 2. p. 149.
‡ Thornton's History of London.
§ De Peste.
‖ History of Oxfordshire.
** Bertrand's Relation Historique, p. 14.
†† Bertrand, p. 50.

mortality, destroying the physicians, surgeons, apothecaries, confessors, and all the other officers and servants of the house, with the whole of the poor in the hospital, including above three hundred foundlings.*

Soon after, all intercourse was prohibited between the town and neighbouring country : the scarcity of provisions which ensued, independently of the crowded state of the city, greatly added to the mortality of the disease : the number of the sick increasing, an hospital was opened for the reception of the infected, where the disease proved fatal to all the attendants. But the disease was not only propagated in those public institutions, where great numbers were crowded together and in the confined dwellings of the poor ; other circumstances occurred which served greatly to diffuse the poison still more generally throughout the city. According to Bertrand, the streets were crowded with " the sick, the dying, and the dead ;" and the vapours which arose from the putrid dead bodies in every part of the city, served to infect the air and spread the contagion ; indeed, it soon extended to places that before this had been inaccessible to it ; monasteries, and houses shut up in the most exact manner, were no longer places of security ; the whole city became more or less *one infirmary*.†

The infection, too, was very much increased from another source not less dangerous. An opinion prevailed that the dogs received the contagion from contact with infected clothes, and thereby became the means of spreading it still more extensively ; the consequence was an order to destroy them : in a few days the streets were strewed with their carcases ; a prodigious quantity were thrown into the water ; these also were soon cast upon the shore, where by the action of a hot sun, the air was filled with the most noxious vapours. Infected clothing and furniture were also continually thrown into the streets from the windows of the houses in which the disease prevailed ; and, if possible, still further to give wings to the poison, fires were injudiciously had recourse to, for the purpose of destroying the infection : " at hours appointed," says Bertrand, " the whole city appeared on fire, and the air became loaded with a thick black smoke, better calculated to retain than to dissipate the contagious vapour."‡ In fact, these fires, he adds, appeared to relume that part of the contagion ; " they heated the air, already rendered suffocating by the heat of the season and climate ; the pestilential poison became more active, and the disease acquirid new force."§

The plague of Aleppo, in 1760, 1761, and 1762, might also be cited upon this occasion, as well as many others, both anterior and subsequent to that period, to show that the epidemic influence of this disease is chiefly dependent upon the atmosphere into which it may be introduced. I cannot, however, pass over, without comment, the plague which the British and French troops suffered during the celebrated expedition to Egypt in 1800 and 1801, inasmuch as it will show that this disease, even in its *native* climate, is governed by the same laws of communication which have been observed when it has been introduced into other countries.

We are accordingly told, by the learned Dr. Wittman,‖ " that the disease is more prevalent at Rosetta than in any other town, or part of Egypt ;" he adds, " the streets of Rosetta are extremely narrow and very dirty. The crowded manner in which the inhabitants live together

* Bertrand, p. 92.
† Bertrand, p. 145.
‡ Ibid. p. 75.
§ Ibid. p. 74.
‖ Travels in Egypt, p. 525.

would appear sufficient, in a stagnant state of the atmosphere, in most of their towns, to generate pestilential or malignant diseases. The very few comforts and conveniences which fall to the lot of the poorer class of the natives in Egypt, by far the most numerous, would lead one naturally to expect great mortality when the plague prevails among them. Dreadful examples are seen annually to happen." In another part of the same work, he is still more explicit on this point, showing that the plague "does not always possess the same activity and force;" and the necessity, as he expresses it, of some "*powerful agent to put the contagion into action, and give it its full force.*" He then asks, "May this agent reside in the atmosphere? Does this peculiar constitution of the air consist in a superabundance, or diminution, of the ordinary proportion of oxygen in the atmosphese? or in the combination of some peculiar gas or gasses diffused in it?" He suggests that a series of eudiometrical and other observations, continued for several years, might throw some light on this subject: "Time alone," he adds, "may unfold this mystery."† But when we take into view the facts he has already stated, relative to Rosetta, and are told by the same author, that in Egypt the plague prevails when the Nile is low, and of course the air loaded with the impurities thence arising; that at Constantinople, the cold weather, in winter, puts a period to its progress, and the still more general observation that the extremes both of heat and cold are unfavourable to the propagation of plague: these facts, in connexion with those already stated of this disease, as it has appeared at different times and in different parts of the world, are certainly calculated to dissipate much of the mystery in which this subject has been enveloped. The remarks of Dr. M'Gregor, (now sir James M'Gregor, principal of the medical staff,) that the plague varies its type according to the state of the air, and other circumstances, and that by *ventilation*, *fumigation*, and attention to *cleanliness*, the progress of the disease was arrested,‡ also serve to confirm the correctness of the view which has been taken of this subject. Even the writings of Assalini, who disbelieves the communication of this disease by contagion, furnish additional support to the principle here contended for; for he admits, that when persons are *shut up* and *crowded together*, in infected places, the disease is readily contracted.§ In another place he observes, "that if a person be exposed to breathe the infected air in the chamber of a patient, or should he stay too long in the same atmosphere, he will run a great risk of contracting the prevailing malady."* He moreover proceeds; in order to prevent all suspicion and avoid all danger of carrying the disease where it has not been before, that they should take nothing with them but the necessaries of life; they should avoid, as much as possible, halting in villages; and each time when they happen to encamp, they should expose their baggage and clothes to the air, which would not fail of dispersing every particle of contagion. As a further evidence too of the connexion between the prevalence of the disease and the state of the air, he remarks, that during the epidemic, "the inhabitants residing near the sea were more exposed than those who were at some distance, and that there were several villages situated on the heights which had not even a single sick person." In many other parts of his work, he shows that his mind was not totally divested of belief in the communica-

† Travels in Egypt, p. 533.
§ Observations sur la Peste.
‡ Med. Sketches, p. 111.
* Observations, &c.

tion of the plague by contagion; and when danger approaches, like some modern professors in religion, he proves himself to be the practical infidel, by distrusting even his own doctrines; for he takes great pains to inform us of the various means he made use of to protect himself against the disease, and which are both as efficient and judicious as the most sturdy contagionist could possibly have employed. Imlac, in Rasselas, speaking of the appearance of departed spirits, says, "Some who deny it with their tongues, confess it by their fears." So with Assalini, and indeed, the same may be said of many others who *affect* to disbelieve the doctrine of contagion.

In addition to the details cited from Thucydides, Livy, and from the writers of modern times, I might here introduce similar facts recorded of the plague of Florence, which appeared in that city in 1348.*

But to conclude upon this part of the subject, and in the language of Dr. Chisholm himself, "Every physician who has delivered his opinion of the origin of the plague maintains, that a peculiar state of the air is absolutely necessary to establish the powers of contagion, and give circulation to the imported infection."†

Another disease which I have placed in the same class with the plague and have considered as governed by the same laws of communication, is *dysentery*. By this disease I mean not that *local* affection of the bowels which is frequently symptomatic of diarrhœa, and unaccompanied with fever, but that form of it which has been described by Pringle, Blane, and other practical writers, under the title of epidemic dysentery, or the dysentery of camps.

This disease, like the plague, appears also to derive much of its infectious character from the condition of the atmosphere in which it takes place: in pure air, where cleanliness and ventilation are attended to, it rarely extends beyond the individual in whom it first originates; but in a vitiated atmosphere, loaded with moisture, marsh effluvia, or the perspirable matter, and other excretions of the human body, especially where many persons are crowded together and in small apartments, dysentery communicates itself to the greater part of those who may be exposed to its influence. Zimmerman remarks, that "in general it appears to him that dysentery became contagious purely through nastiness and the crowding many people together in a small space, but was by no means so of itself."‡

And as a further evidence that the disease was derived not from the noxious qualities of the atmosphere alone, but from contagion communicated through that vitiated medium, he also observes of the dysentery which occurred at Dettingen, in 1743, that such of the officers, among whom it was not so general as among the soldiers, as had lain wet at Dettingen were first attacked by it; the rest received it by contagion; but a regiment that had not lain in the damp, nor been exposed to the rain, remained perfectly free from it, at a small distance from the camp; though, excepting that they were not subject to the contagious effluvia of the rest, "they breathed the same air, ate the same provisions, and drank the same water."§ And in the hospital in the village of Feckenheim, about a league from the camp, the dysentery being introduced, "the air became infected to such a degree that not only the rest of the

* See Introduction to Boccacio's Decameron.
† Essay on the Malignant Pestilential Fever, vol. I. p. 286.
‡ Zimmerman on Dysentery, p. 20.
§ Ibid. p. 26.

patients, but even the apothecary, nurses, and the other servants, with most of the inhabitants of the village, were infected."*

Dr. Donald Munro, who, as an army physician, had frequent opportunities of observing the character and progress of dysentery, ascribes the greater violence of this disease to obstructed perspiration, moist and putrid vapours, the putrid steams of dead horses, of the privies, excrements not covered with earth, or to the unwholesome, moist, putrescent vapours of marshy or wet grounds, or pools of stagnated water acted upon by the heat of summer, and of other corrupted animal or vegetable substances, all which served to increase the infection. Hence he observes that in camps, the more hot and rainy the season, the more wet and marshy the ground, and the more the air is replete with putrid vapours, the more frequent and the more fatal is the dysentery."†

The remarks of Sir John Pringle are also in point on this subject. "Some dysenteries," he observes, "appear upon first taking the field, but the cases are never so bad nor nearly so frequent, as towards the end of summer; they then become epidemic and contagious. They have always been numerous and worst after hot and close summers, especially in fixed camps, or when the men lay wet after a march in warm weather."‡ "In general the contagion does not suddenly spread; for whole towns and camps are never seized at once from the impurities of the atmosphere; but the infection is carried from one to another by the effluvia, or clothes and bedding, &c. as in the plague." "In camps the cantagion passes from one who is ill to his companion in the same tent, and from thence, perhaps, to the next." "The foul straw," he adds, "becomes infectious, but the greatest sources of infection are the privies, after they have received the dysenteric excrements of those who first sicken. The hospitals likewise spread it, since those who were admitted with the flux not only gave it to the rest of the patients, but to the nurses and other attendants of the sick."‖ And to show that this disease is not dependant on a general constitution of the atmosphere, but upon that which is impure, and to which the dysenteric taint has been communicated, he observes of the epidemic which raged at Nimeguen, in 1736, "that none of the neighbouring towns suffered, unless by their communication with the place infected."§ Similar facts, illustrative of the rapid extension of this disease when introduced into ships of war, are recorded by Dr. Blane, in his valuable work on the Diseases of Seamen.

That the contagiousness of *typhus fever* is, also, in a great degree, ascribable to a similar condition of atmosphere as its pabulum, is demonstrated by facts recorded in almost every book of practice, more especially in those relating to the diseases of the army and navy, which have ever been found to be nurseries of this disease. The observations made upon this subject by the Linds, Pringle, Blane, Percival, Smyth, Trotter, Haygarth, Ferriar, Currie, and others, relating to the spread of this disease, when introduced into hospitals and ships of war; its prevalence and diffusion among the poor of London, Edinburgh, Liverpool, and the manufacturing towns of Great Britain; the beneficial effects which have been derived from the establishment of fever wards, and houses of recovery, the advantages which have been experienced from the fumi-

* Zimmerman on Dysentery, p. 139.
† Diseases of the Army, vol. I. p. 314—316. ‡ Ibid. 218. ed. 7th.
§ Ibid. 254. ‖ Diseases of the Army, p. 252

gating or oxygenating processes introduced by Dr. Johnstone of Worcester, Guyton de Morveau, and Carmichael Smyth, in arresting the progress of the typhus fever, all irresistibly lead to the conclusion, that the impurities of the air constitute the fuel of this disease ; and, to use the expressive language of Dr. Ferriar, of Manchester, in a late communication which I have received from that learned physician, that " dilution with atmospheric air is now ascertained to be the most effectual means of destroying contagion, and of controlling the ravages of this disease."*

Were it necessary, I might adduce a volume of additional testimony on this subject. I cannot, however, omit the following pertinent remark of Dr. Haygarth, who, like another Howard, has devoted his life to the investigation of this interesting subject ; and to whom Great Britain is indebted for the first establishment of institutions specially devoted to the important purpose of arresting the progress of contagious diseases. In his remarks on the nature of the contagion which produces putrid fevers, he observes, " I soon discovered that their infectious atmosphere was limited to much narrower extent than even the small-pox. So manifestly I observed this to be the case, that in a clean, well-aired room, of a moderate size, the contagious poison is so much diluted with fresh air, that it very rarely produces the distemper, even in nurses exposed to all the putrid miasms of the breath, perspiration, fæces, &c. whereas, in the close, dirty, and small rooms of the poor, the whole family, generally, caught the fever. Hence we may conclude, that in well-aired and clean apartments, the air is seldom so fully impregnated with the poison as to acquire an infectious quality."†

The observations of the late Dr. Willan are also in point on this subject. " Formerly," says that accurate observer, " the typhus with petechiæ, &c. often occurred in our prisons, and proved fatal to those who were under confinement in close cells, or who lodged in crowded apartments. Mr. Box, surgeon of Newgate, informs me that the fever has been rendered less frequent there, and less virulent, by removing the persons first affected, into airy rooms, or wards, and by a general attention to ventilation, cleanliness, &c. so that, at present, petechiæ do not appear in more than one case in thirty."‡ And of three hundred and seventy-nine patients committed into the London House of Recovery, says Dr. T. Bateman, nine only, or about one in forty-two, were affected with petechiæ.§

The facts which have been ascertained relative to the communication of *yellow fever*, furnish no less conclusive evidence that this disease, like those already noticed, is, or is not, generally contagious, depending on the qualities of the air to which it may be communicated. The history of every visitation of the disease in the United States, establishes this truth. It has not only regularly made its first appearance in our sea-port towns, and in those places where the air is most impure ; at that season of the year, and in those seasons when such impurities acquire the greatest virulence ; in those houses which are most crowded with inhabitants, and where there is the least attention paid to cleanliness ; but, wherever the same disease has been thence conveyed to other parts of the same city, or town, or into the country, it either was

* See American Med. and Philosophical Register, vol. 2.

† Proceedings of the Board of Health in Manchester. Letter from Dr. Haygarth to Dr. Percival, p. 3.

‡ Willan on Cutaneous Diseases, p. 469. § Ibid

propagated or extinguished, according to the *local* circumstances of the place to which it was so conveyed.

Dr. Lining, in his description of the yellow fever which was introduced into the city of Charleston in 1732, 1739, 1745, and in 1748, observes, that although the infection was spread with great celerity through the town, yet, if any from the country received it in town, and sickened on their return home, the infection spread no farther, not even so much as to one in the same house. He remarks, that the disease was generally more fatal to those who lay in small chambers not conveniently situated for the admission of fresh air.* The yellow fever with which the city of New York was visited in 1791, and which was introduced by a vessel from the West Indies, and rendered memorable by the death of one of our most respected citizens, General Malcolm, who was the first victim to the epidemic of that season, is thus recorded by Dr. Jonas Addoms, in his excellent dissertation on that disease:

"About the middle of August, 1791, a contagious fever appeared in the city of New York, which first discovered itself near Peck-slip, a part of the city thickly inhabited, its houses generally small, and badly ventilated; many of the inhabitants were in indigent circumstances, which is a frequent cause of the want of cleanliness. Here it raged a considerable time; it then began to spread, as some attendants on the sick became infected who lived in other neighbourhoods. By this means it was carried to other families, and most generally could be traced to this source. It likewise proved more particularly fatal near the place where it first appeared, than in any other part. Thus at length it spread through the city, until about the middle of October, when the weather growing a little cooler, the disease greatly abated, and in a short time disappeared."†

Dr. Addoms, the author of that dissertation, since that time resided many years in St. Croix, and being associated with a celebrated physician of that island, the late Dr. Gordon, had ample opportunities of seeing the yellow fever in all its forms. During his last visit to this city, not long before his death, he informed me that the disease which he had seen in New York in 1791, was precisely the same which he afterwards saw in St. Croix, and which frequently prevailed during his residence there, more especially among Europeans newly arrived within the tropics. He also remarked, at the same time, that this disease always acquired new virulence, and was rendered highly contagious, when introduced among soldiers crowded in barracks, or on shipboard.

In the yellow fever of 1793, which was introduced into the city of Philadelphia from the West Indies, it is conceded, on all sides, that the disease made its first appearance in Water-street, and that all the cases of this fever were, for two or three weeks, evidently traced to that particular spot. It is also a fact well ascertained, that in the vicinity of the place where the infection was first received, the air was, at the same time, in a very offensive condition from a quantity of damaged coffee which was exposed upon the dock, and under circumstances favourable to its putrefaction and exhalation. From that place the disease gradually infected a considerable part of the city, the Northern Liberties and

* Edin. Phys. and Lit. Essay, vol. 2. p. 408, 427.
† Inaugural Dissertation on Yellow Fever, p. 7.

district of Southwark, and did not subside until terminated by frost, after having been fatal to nearly five thousand persons.

It is also to be remarked, that its ravages were chiefly confined to the poor, and to those parts of the city where the houses were small, and the least attention given to cleanliness and ventilation. In the language of Mr. Carey, "it was dreadfully destructive among the poor. It is very probable that at least seven-eighths of the number of the dead were of that class; the inhabitants of dirty houses have severely expiated their neglect of cleanliness and decency by the number of them that have fallen sacrifices. Whole families, in such houses, have sunk into one silent, undistinguishing grave. The mortality in confined streets, small alleys, and close houses, debarred the free circulation of air, has exceeded in a great proportion, that in the large streets, and well-aired houses. In some of the alleys a third or fourth of the whole of the inhabitants are no more. The streets in the suburbs that had the benefit of the country air have suffered little. It is to be particularly remarked that, in general, the more remote the streets were from Water-street, the less of the calamity they experienced."*

"Though the disease," says Dr. William Currie, "was highly contagious, the influence of the contagion was circumscribed to a narrow sphere."†

As a further evidence that it did not depend on a general condition of atmosphere, the same author remarks, "that while this formidable disease was making such ravages in the city, the country, for some miles around, was never more healthy.‡ In another work, Dr. Currie has very explicitly admitted the *qualified* contagiousness of yellow fever, observing, "that it is only contagious in situations where the air is confined, and the exhalations of the sick are permitted to accumulate through neglect of frequently changing the bed and body linen of the patient."§

Similar facts are recorded of the visitation which New York experienced of the same disease in 1795. Upon another occasion I shall make public the evidence which is in my possession, indisputably proving the importation of yellow fever of that season from Port-au-Prince. In that year the disease appeared upon the east side of the city, first affecting some seamen who had received the infection from a brig directly from Port-au-Prince; from thence it spread in the vicinity from Dover-street to Peck-slip; but throughout that season it was confined, in a great degree, to that part of the town where the local condition of the atmosphere was peculiarly favourable to its diffusion; for not only an unusual quantity of filth was accumulated in Peck-slip, but at that very time a great number of emigrant poor had arrived from England, Ireland, and Scotland, so that the numerous lodging houses, especially in that neighbourhood, were unusually crowded; add to this, that the weather was uncommonly moist, and thereby particularly calculated to spread the infection. According to the statement made by Dr. Bayley, it was particularly fatal to the emigrants of that very summer;

* Carey's Account, 4th edit. p. 61, 62.
† Treatise on the Synochus Icterodes, p. 8.
‡ Ibid. p. 11.
§ See Observ. on the Yellow Fever, in the Philad. Med. and Phys. Jour. vol. 2, part 1.

for "out of nearly eight hundred persons who died," he observes, "not more than one hundred and fifty were citizens of New-York."*

In another part of the same statement he remarks; "so limited was the operation of the contagion, that the number of those taken sick in low situations, compared with those residing in more elevated parts of the city, may be computed as twenty to one."†

In 1798 New-York was again visited with this scourge of our seaport towns: during the months of August, September, and October, about two thousand persons fell victims to this disease; at the end of which time a keen frost put an almost instantaneous termination to its progress. The disease of that season first appeared at the shipyards, in the neighbourhood of New-slip, and, as in former years, was introduced from the West Indies.‡ After cutting off several persons in the neighbourhood in which it first commenced, the same vessel was removed to another slip, also on the east side of the city; from thence the disease was communicated by those who worked on board to a thickly-settled part of the city, where the houses are small, the streets narrow, and chiefly occupied by the poor; viz. Cliff-street, John-street, Ann-street, Fair-street, Eden's-alley, and Rider-street; at the same time, however, it still continued to extend its ravages in the vicinity of the place to which the poison had been first communicated; and to some other thickly-settled parts of the town, to which it was subsequently conveyed. In a short time afterwards it was introduced into Pearl-street, and in that part of it between Burling and Peck-slips, where it spread very extensively In that season a number of circumstances occurred to diffuse the contagion in that part of the city; a great quantity of rain had fallen, so as to overflow the cellars in Pearl-street, which were, at the same time, stored with salted provisions: these were soon afterwards spoiled, and loaded the atmosphere with a highly offensive vapour; the disease raging at that time in that neighbourhood, acquired new virulence, and, for the most part, followed the course of the vitiated atmosphere: "beyond the limits of which," says Mr. Webster, "the disease exhibited little infection;" indeed the extension of this disease as has already been frequently observed, was so circumscribed within the limits of this impure air, that it became very generally believed that, in that season, whatever may have been the case in former years, the disease exclusively arose from those domestic sources, more especially from the putrid provisions. But that the yellow fever of that season did not derive its origin from the spoiled beef is evident, not only from the fact that the disease had already previously appeared in other parts of the town, and even in that very neighbourhood, before those heavy rains had fallen, and their pernicious effects were perceived; but also that those tainted provisions, unaccompanied with the specific poison of the disease did not of themselves communicate infection to those who were constantly exposed to their effluvia.

Mr Edmund Prior, the inspector-general of beef at that time, informed me, that of forty persons whom he had employed in examining the beef, and in removing and emptying such barrels as were found in a putrid state, not one was taken ill of the yellow fever.§ But Dr.

* See Bayley on the Epidemic of 1795, p. 90.

† Ibid. p. 80.—See also Letters to Dr. Buel by E. H. Smith.

‡ See Statement of Facts on this subject by the Rev. Dr. M'Knight, in the Amer. Med. and Phil. Reg. vol. 3.

§ See the Editor's Essays on various subjects of Medical Science, vol. 1. p. 329. Note C.

Chisholm and Dr. Stewart have abundantly shown, that decomposed animal or vegetable matters will not, of themselves, produce the pestilence;* and that this disease is generated in the human system, and communicated from one person to another, by a peculiar secretion from the morbid body. My object is to show, that when such virus is introduced into a certain state of atmosphere, the disease is readily contracted, but that beyond that atmosphere it is rarely infectious.

Although the diseases which have been noticed are rarely communicable in pure air, and are not generally contagious in the country, it is not less true, that in some few instances, it appears, either that the virus, as secreted from the diseased body, is alone, in sufficient quantity, or possesses a sufficient degree of virulence, to reproduce such diseases; or, that by means of the impurities collected about the diseased individual occasioned by inattention to cleanliness and change of clothing, the retention of his excretions, or the confined air of his apartment, the virus itself becomes multiplied, and thereby the means of communicating the disease from one to another are in the same degree increased: for it is a fact not to be questioned, that instances of yellow fever, as well as of the plague, dysentery, and typhus fever, have been occasionally infectious, even in the more pure air of the country, though it must be acknowledged that such cases are of rare occurrence.

It is observed by Dr. Rush, whose records of the several visitations of the yellow fever in the city of Philadelphia will be lasting monuments of the facts which they contain, as well as the impressive and eloquent manner in which they are related, "that out of upwards of one thousand persons who have carried this disease into the country from our cities, there are not more than three or four instances to be met with of its having been propagated by contagion."† Such instances, however, have occurred in New Hampshire, as related by Dr. Spalding;‡ in Connecticut, as stated by Dr. William Moore of this city;‖ on Staten Island, in 1898, as recorded by Dr R. C. Moore;** at Huntington, on Long Island, in 1795 and 1798;†† and at Germantown, in the vicinity of Philadelphia, as related by Dr. Wistar.‡‡ But these very exceptions, if they can with propriety be denominated exceptions, manifestly prove the specific character of those diseases, and that they are propagated by a specific secretion peculiar to each disease, whether it be plague, dysentery, or yellow fever. Indeed, to use the emphatic expression of the Edinburgh Reviewers on this subject, "In the present state of medical knowledge, it would not be at all more absurd to deny the existence of fever altogether, than to maintain that it is not propagated by contagion."§§ But in the language which Dr. Mead has applied to the plague, we may say of all the diseases of this class, "that a corrupted state of the air is, without doubt, necessary to give these contagious atoms their full force."‖‖

If it were necessary, I might go on to cite every return of the yellow fever with which the United States have been visited, to show that the

* See the Editor's Essays on various subjects of Medical Science, vol. 1. p. 330. Note D.

† Observations on the origin of Yellow Fever of 1799, p. 12.

‡ Med. Repos. vol. 3. p 8.

‖ Addom's Disser. p 7, Amer. Med. and Phil. Reg. vol. 3. p. 177.

** Ibid. vol. 2. p. 22.

†† Ibid. vol. 3. p. 191.

‡‡ Additional Facts and Observations by the College of Physicians of Philadelphia, p. 30.

§§ Edinburgh Review, vol. 1. p. 246.

‖‖ Mead's Medical Works.

progress of the pestilential poison has ever been commensurate with the impurities of the atmosphere, and that, when sufficiently diluted with pure air, it ceases to propagate itself.

It is probably owing to this impure condition of the atmosphere that the various fevers, and the greater mortality of diseases in general, are to be ascribed, which physicians have frequently observed to precede the appearance of pestilential disorders, and to announce their approach, and which have led many to conclude that the pestilence itself was thus engendered by local circumstances, and not imported. Facts of this nature have served to mislead the editors of the Medical Repository, and many other late writers, who thus confound the *exciting* and *predisposing* causes of disease; who do not discriminate between the inflammable materials and the spark which lights the flame; but have identified the domestic circumstances which have served to diffuse the poison of yellow fever, with the peculiar virus itself by which that disease has been introduced into the various cities of the United States.

The same local circumstances, I believe, will go far in accounting for the "pestilential state of the air," "the secret constitution of atmosphere," so often recorded by writers on epidemics; at the same time that they teach us, that the diseases now under consideration are only epidemic in as far as the vitiated state of the air is itself epidemic.

I, however, wish it to be understood, that I do not exclude the influence of bodily predisposition, the passions of the mind, and many other circumstances, in aiding the propagation of pestilential diseases.

Having, as I trust, shown, by the facts that have been adduced, that the plague, dysentery, typhus, and yellow fever, constituting the third class of contagious diseases, require an impure state of the air to diffuse and multiply them, the question next presents itself, in what manner does such impure air operate in spreading those diseases? Upon this part of the subject I have the misfortune to differ from Dr. Chisholm, no less than I do as to the necessity of such an atmosphere to propagate the peculiar poison of each of those diseases. Dr. Chisholm observes, that if the proposition had been advanced, "that those diseases, particularly the pestilential yellow fever, are rendered more violent in their action under the circumstances stated of an impure atmosphere, that no possible objection could be made to it, inasmuch as it is supported and proved by all experience;" and he proceeds to express the opinion that such an atmosphere may have an effect "by rendering the system of the healthy person, who receives the poison from the sick, more susceptible at the moment of its introduction, of its peculiar action;" but that this multiplying power does not proceed from any action of the air upon the peculiar virus of those diseases; that "it does not proceed from their pure atmosphere becoming assimilated to the poison introduced."

That air, deprived of its due proportion of oxygen, and loaded with mephitic materials, especially the confined excretions of the human body, will vitiate the mass of circulating fluids, and impair the functions of the nervous system, cannot be denied; that the febrile diseases with which the system may be affected while in this state, will acquire an extraordinary degree of malignancy, will also be readily conceded; but that such condition, either of the atmosphere, or of the human system, increases its susceptibility to be acted upon by the virus of those contagious diseases, composing the third class, does not correspond either with the facts which have fallen under my own observation or with those I have been enabled to obtain from the writings and observations of others.

The well-known facts relative to the communication of *jail fever* to the judges presiding at the Black Assizes, in 1577,* and a similar infection being communicated to the judges on the bench, and other persons present, at the sessions held at the Old Baily, in 1750, while the prisoners themselves remained in health, insensible to infection, furnish incontestible evidence of the effects of habit in diminishing the sensibility to the poison of fever; and with regard to the *yellow fever*, it assuredly has not been the case in the United States, that those who are most accustomed to the impure air of the place in which the disease prevailed, were more susceptible of the disorder than those who had recently arrived from the pure air of the country, or from the more elevated parts of the town. On the contrary, those who were least accustomed to the impure air of the city, or of the infected spot, were uniformly observed to be most susceptible of the contagion. Those, too, who enjoyed the most vigorous health, and the most robust constitutions, the reverse of that condition of body which would be the effect of a residence in impure air, were more readily infected upon coming into the atmosphere impregnated with the contagion, than those who had remained constantly exposed to its influence. Whatever differences of opinion have existed among the physicians of the United States, as to the origin of the disease, they are all perfectly agreed relative to the facts which I have just stated. Indeed Dr. Chisholm himself inadvertently admits the same to be true; for he observes, that, in the West Indies, sailors, soldiers, and young men, especially those who had recently arrived from Europe, and are least accustomed to the climate, were more obnoxious to it than others.†

Dr. Gordon, and indeed, all the most distinguished practical writers on this subject concur in the same observation. "New comers," says Dr. Gordon, in the appendix to Dr. Chisholm's late valuable letter to Dr. Haygarth, "were infected with the pestilential fever, while the old seasoned soldiers had only the common tropical remittents; and this was universally the case whenever both diseases were at the same time epidemic."‡ A similar, and still more general, observation on the predisposition of those who are unaccustomed to impure air, is made by Dr. Blane. "Infection," "says he, like some other poisons, does not so readily affect those who are accustomed to it, and therefore those who are in the habit of being exposed to it, frequently escape its bad effects." For the like reason, he adds "physicians and nurses are less susceptible than others; and strangers, who are accustomed to a pure air, are the most susceptible of any."‖ With these facts and observations before us we are compelled to conclude, that the impure air necessary to propagate the contagion does not operate in the manner Dr. Chisholm supposes, by "increasing the susceptibility of the system to the action of the poison introduced." On the contrary, I believe that it produces its effects by some chemical combination with the peculiar virus secreted from the diseased body, and that thereby the contagion becomes more or less extensively multiplied, according to the extent and virulence of such vitiated atmosphere.

I shall not attempt to define the precise nature of the chemical union which takes place under such circumstances. But I wish it to be dis-

* Bacon's Works, vol. 2. Stowe's Chronicle.—See Editor's Essays vol. 1. p. 352 Note F.

† Chisholm's Letter to Haygarth, p. 182. &c. ‡ Ibid. 220.

‖ Diseases of Seamen, p. 223.

tinctly understood, that in such combination, I do not believe, with those writers who contend that a *tertium quid* is produced ; or, as Dr. Adams, of London, in his late publication on Epidemics, has reiterated the same idea, " that a new kind of air is generated."* On the contrary, as far as I am enabled to view the subject in connexion with the facts usually observed during the prevalence of the diseases which have been noticed, I am inclined to believe, that in this combination the peculiar virus of those diseases is in no way changed, but multiplied ; and that this multiplying power is a process very analagous to that which we observe to take place in the assimilation of the fluids of the human body to the peculiar taint which may be introduced into the system, as, for instance, in small-pox and syphilis ; or, perhaps, that it more nearly resembles the process of fermentation, as it occurs in inanimate matter. By both these processes such an assimilation takes place in the fluids acted upon, whether of the living body or in dead matter, that they partake of the same properties with the virus or ferment introduced, and are thereby rendered capable of renewing the same process in other bodies under similar circumstances. This process has very properly been denominated by Dr. Walker, the *assimilating fermentation*,† and has been no less successfully employed both by him and by Mr. Cruikshank,‡ as well as by Dr. Cullen, to explain the changes which take place in the living system, acted upon by small-pox, and the virus of other contagious diseases, than it has been by Sir J. Pringle,§ Macbride,‖ and Alexander,¶ to the phenomena of fermentation, as it occurs out of the body.** The history of plague, dysentery, and typhus fever as well as the recent observations in animal chemistry, furnish a variety of facts which may be adduced in illustration of such fermentative process taking place in the atmosphere, and in watery fluids loaded with the excretions of the human body, or the vapours of vegetable and animal substances in a state of putrefaction.

Similar facts, illustrative of the fermentative process contended for, have been observed whenever the yellow fever has prevailed in any of the cities or towns of the United States. I have already stated, that this disease has always prevailed in proportion to the presence of such fermentable materials. It is no less true, that whenever the disease has been introduced, it has spread in the greatest degree in those seasons when the air was unusually moist : this was remarkably the case in New York, in 1795†† and 1798,‡‡ and in Philadelphia, in 1793 and 1798:§§ and that the yellow fever has prevailed in the United States in those seasons when the heat, combined with moisture, was most favourable to such assimilating or fermentative process is also proverbially true. It is also to be observed, as universally admitted, that the same disease has uniformly been extinguished by the approach of frost which destroys such fermentative process.

Another argument in favour of this explanation is derived from the fact that this disease has, in several instances, been introduced into our cities, without extending beyond the individuals who have introduced it ; manifestly owing to the active exertions of a vigilant police, at the same time that every attention was paid in preserving cleanliness about

* Adams on Epidemics, p. 11.
† Walker's Inquiry into the Small-pox.
‡ Anatomy of the Absorbing Vessels.
§ Diseases of the Army, Appendix.
‖ Experimental Essays.
¶ Experimental Essays and Experimental Inquiry.
** See Editor's Essays vol. 1. p. 537. Note G.
†† See Bayley on the Yellow Fever of 1795. ‡‡ Hardie on the Yellow Fever of 1798.
§§ See Rush and Currie.

the persons of the sick. This was remarkably the case in the year 1804, when the yellow fever was introduced at the Wallabout on Long Island, and in 1809, when the same disease prevailed at Brooklyn. In each of those years the fever was introduced into this city by persons who had received the infection on Long Island, but, owing to the circumstances just mentioned, it was not communicated to others: while the same disorder, owing to local circumstances, spread in the vicinity of those places on Long Island where it had first appeared.*

During the year 1811, the yellow fever was also introduced into the city of Amboy, New Jersey, from the Havana, but did not spread beyond those persons who were first attacked in consequence of their immediate exposure to the air of the infected vessel. The local circumstances of Amboy, its elevated situation, its dry and sandy soil, its wide streets and spacious houses, their distance from each other, and the remarkable cleanliness of the town, most satisfactorily account for the sudden extinction of the disease, while the evidence of its importation must be admitted to be conclusive.†

But there is another circumstance which particularly merits attention: in every epidemic visitation of the yellow fever, several days, viz. from eight to twelve, or fourteen, have generally elapsed between the first cases that appeared, and the communication of it to other persons, even in the same neighbourhood: insomuch that not only our citizens, but our physicians themselves, have been led to doubt the existence of the disease, and to stigmatise as alarmists those who first announced the deadly visiter.‡ I can never forget the occasion, in 1795, when that venerable and experienced physician, the late Dr. John Bard, assembled the physicians of this city to announce to them the first cases of this disease which he had observed in the family of his friend, Mr. Jenkins. The physicians met, but declared they had seen no other fevers than what they had been accustomed to observe every year, and even doubted, on that occasion, the correctness of Dr. Bard's observations, relative to the nature and character of the disease to which he called their attention; but that accurate observer had been too familiarly conversant with the yellow fever as it appeared in New York in 1743 and 1762, and too well knew the pathognomic symptoms of that disease to confound it with the fevers of our own climate: he, accordingly, in the most emphatic language, replied to their doubts, "Gentlemen, within a fortnight you will all see and acknowledge the West India yellow fever to exist in our city." The event is well known.§ The same interval between the first cases of the disease, and its subsequent diffusion in the neighbourhood where it first made its appearance, is noticed by almost every writer who has recorded the yellow fever in the United States.

A similar interval has been frequently noticed in the history of the plague. Dr. Russel, in his account of the plague of Marseilles, in 1720, observes, "that from the 12th of July to the 23d there was a deceitful pause, during which the popular apprehensions began to sub-

* American Med. and Phil. Reg. vol. 2. p. 95, &c.

† See American Med. and Phil. Reg. vol. 3. also Edinburgh Med. and Surg. Journal, and the Med. and Phys. Journal of London.—See Editor's Essays, vol. 1. p. 358 note H.

‡ Editor's Essays, vol. 1. p. 359. note I.

§ See Bayley and Hardie on the Epidemic of 1795.—See also Currie on the Fever of 1799.

side. The physicians were reproached with ignorance in having mistaken ordinary fevers for the plague. The disease, however, in this interval, had continued to spread in the Rue de l'Escale, where it made its first appearance."*

It has also been remarked of the plague, as well as of the yellow fever, that the infection spread most rapidly when the atmosphere was not only heated and loaded with moisture, but when it was least agitated by wind or thunder-storms. During those calms, when the air may be said to be relatively at rest, it has been uniformly remarked, that the contagion of the yellow fever has multiplied itself most extensively, as was always very apparent by the greater number that were seized within five or six days after such close weather had been observed, all which circumstances certainly conspire to promote the fermentative process that has been contended for.

This is not all: whenever the yellow fever has been introduced into the cities of the United States, its first extension has always been slow and gradual. Upon several occasions its boundaries have been accurately defined by our board of health. This, as I have stated on a former occasion, was remarkably the case in this city in 1805. The disease, in that year, was confined, for some weeks, to a small portion of the eastern side of the city, and, as stated by the board of health, "not a case occurred, in any part of the town, that was not referrible to that as its source."† This fact being ascertained, the board accordingly forbade intercourse with the infected portion of our city, and ordered an abandonment of that part of the town, threatening violent measures if their orders were not immediately complied with. In a short time after, the infection extended a few streets further; the board of health again defined its limits, and again declared that still not a case had occurred that could not be traced to this part of the city as its source.‡

Will not the same assimilating or fermentative process furnish the most satisfactory solution of the fact noticed by Boerhaave, Cullen, Lind, Russel, and many others, that *fomites* are more to be dreaded than the excretions alone proceeding from the diseased body? Not, however, in the manner those authors suppose, that such fomites acquire greater virulence; but, that by the same process the specific poison has been more extensively multiplied by means of the atmosphere and foul excretions which are involved in the clothing worn by the sick; and that by the same means the danger of the infection has been increased in the same degree that the poison has been multiplied. As a further evidence, too, that the contagion is *multiplied*, but not more concentrated, as those writers have imagined, it is a fact established by every writer on those contagious diseases, that the first cases of every epidemic are uniformly the most fatal; but that, as the season advances, the danger of taking the disease is increased, while the disease itself has, perhaps, become even milder than it was in the commencement.

Let me further ask, do not the processes lately introduced for disinfecting the air by means of the fumes of the acetic acid, the oxygenated muriatic acid gas, the nitric, and sulphuric acid vapours, operate by

* History of the Plague.
† Hardie's Account of the Malignant Fever of 1805.
‡ Chisholm's Letters to Haygarth.—See Editor's Essays, vol. 1. p. 360. Note K.

making new combinations with some of the ingredients constituting the tainted atmosphere, and thereby decomposing the morbid compound? According to Dr. Crawford, "the fluids which destroy the fœtid odours most speedily, are those which are acknowledged to contain the greater portion of oxygen, and it is, therefore, extremely probable that this change depends on the union of the oxygen with animal hepatic gas, or some one of its constituent parts." But the explanation which has been offered by the late Dr. Garnett, of the manner in which the oxygen thus employed combines with the hydrogen gas which holds the morbid secretions in solution, appears to me the most satisfactory explanation that has been given of those phenomena.*

From these facts, I have been led to conclude,

1st. That an impure atmosphere is indispensably necessary to multiply and extend the specific poison, constituting *plague*, *dysentery*, *typhus* and *yellow fever*.

2dly. That the impurities of the atmosphere do not produce their effects in the manner suggested by Dr. Chisholm, by increasing the susceptibility of the system to be acted upon by the peculiar virus of those diseases.

3dly. That, instead of predisposing the body to be thus acted upon, the reverse is the fact; that the predisposition of those who are most exposed to such impure air is less, while those who reside in the pure air of the country are most liable to be infected when exposed to the contagion.

4thly. That the impurities of the atmosphere are fermentable materials, to be called into action by the specific ferment of those diseases, aided by heat, moisture, and a calm state of the atmosphere; and that as far as such atmosphere extends, and the circumstances favourable to such fermentative or assimilating process continue, so far those diseases become epidemic, but no further.

The same idea of an assimilating process appears to be expressed by Lucretius, when, speaking of the contagiousness of the plague, he observes,

> "Proinde, ubi se cœlum, quod nobis forte venenum,
> Conmovet, atque aer inimicus serpere cœpit;
> Ut nebula ac nubes paullatim repit, et omne,
> Qua graditur, conturbat, et immutare coactat.
> Fit quoque, ut in nostrum quam venit denique cœlum
> Conrumpat, reddatque sui simile, atque alienum."
>
> LUCRETIUS, de Nat. Rerum, lib. VI.

Or, as it has been rendered by that learned surgeon and accomplished scholar, John Mason Good, Esq.

> "But when the heaven of poisonous power to us,
> First moves remote, its hostile effluence creeps
> Slow, like a mist or vapour; all around
> Transforming as it passes, till at length,
> Reach'd our own region, it the total scene
> Taints, and assimilates, and loads with death."

If the view which has been taken of this subject be correct, a still more important truth is the result; that, while by a rigid and well executed system of quarantine laws we have it in our power to guard

* Proceedings of the Board of Health of Manchester, p. 40—42. Robertson's Treatise on Medical Police, vol. 2. p. 127. Robertson's Natural History of the Atmosphere, vol. 2. p. 352. See Editor's Essays, vol. 1. p. 362. Note L.

against the introduction of the spark that kindles the flame, we are also enabled, by means of domestic cleanliness and ventilation, to extinguish it when introduced. For this purpose our magistrates and guardians of the public health cannot be too attentive in their police regulations to have all noxious materials removed from our streets and our dwellings; and, at the same time that they are ornamenting our cities by the erection of magnificent buildings, and the introduction of other important improvements, they should also avail themselves of every opportunity which may present of widening our streets, and of reserving squares and other pieces of ground to be ever kept vacant, as among the most effectual means of preserving the health of our citizens, and guarding against the propagation of contagious diseases,

———τὸ Πελασγικὸν ἄργὸν αμεινον.

———"Best is Pelasgic empty"

was wisely expressed by the Pythian oracle; thereby denoting that every large and populous city, as well as Athens, should have its *pelasgies*, or vacant pieces of ground, as so many reservoirs of pure air for the purpose of counteracting the effects of contagion when introduced.

Phrenitis.

While I concur with the author, as to the general means of counteracting this disease, I must take occasion to dissent from two points of practice recommended by him; viz. the application of blisters to the scalp, and external cold to the head. The former I have observed to aggravate the excitement of the brain, by increasing the determination of blood to the head; whereas, applied between the shoulders or to the extremities, they have, by creating a new irritation, diverted the current from the primary seat of the disease.

In like manner, the clay-cap, æther, ice, and other cold applications, are no less injurious by the re-action and increased flow to the brain which ensue from their use: at the same time that they diminish the discharge by perspiration so essentially necessary for the removal of inflammatory action. But from tepid applications, viz. warm water, or vinegar and water frequently renewed, I have seen the most beneficial effects in inflammatory affections of the brain—the same remark is applicable in inflammation of the eyes, that while cold applications are injurious collyria applied warm, are salutary. So also says the celebrated oculist Mr. Ware, whose long and extensive experience entitles his observations to the fullest confidence.

Trachitis, or Croup.

Croup, according to the definition given of it by Dr. Cullen, consists "in an inflammation of the glottis, larynx, or the upper part of the trachea, whether it affects the membranes of these parts or the muscles adjoining." In one particular, this definition is defective, as the disease is not confined to the upper portion of the trachea, but also most usually extends itself throughout the whole of the windpipe, even into the bronchiæ, and to a degree over the whole surface of the lungs. The effusion of the lymph, or other materials, constituting the membrane, which

is the effect of this disease, also very frequently extends into the bronchiæ, though of a less firm texture than that part of it which is found in the upper portion of the trachea. Some preparations in the anatomical museum of Columbia College show this fact. My late distinguished colleague, Dr. John Augustine Smith, the former professor of Anatomy and Surgery in the University of New York, also informs me, that in a case of croup, met with by him, in which he was called upon to examine the parts after death, he observed the membrane to extend as far as the bronchiæ could be traced by the knife.

Conversing also on this subject with Dr. Bard, the President of the college of Physicians and Surgeons of this city, and who has probably been more conversant with this disease than most practitioners, he informs me, that he has commonly observed in those cases which he has examined after death, that the membrane extended into the bronchiæ as well as into the trachea.

Dr. Bard also remarks, that the disease is not even limited to the trachea and bronchiæ, but that the lungs, throughout their whole substance, to a certain degree, participate in the affection; insomuch that he has seen those organs rendered so dense and solid, that they exhibited in their appearance a great resemblance to the firm and dense structure of the liver, instead of the spongy, loose texture which the lungs naturally present. The appearances upon dissection, related by Dr. Cheyne, in the last addition of his valuable work on this subject, correspond with the observations made by Dr. Bard.

Dr. Cullen very properly observes, that croup may arise, "first in these parts, and continue to subsist in them alone, or it may come to affect these parts, from the cynanche tonsillaris or maligna spreading into them." This observation was long since made by Dr. Cullen, and has been abundantly established by the cases and dissections published by Dr Bard, whose treatise is referred to in the Nosology of Dr. Cullen, under the head of cynanche maligna Other writers, however, do not appear to have paid sufficient attention to this distinction.

Dr. Bard informs me, that since the publication of his Essay in 1771, he has frequently observed this disease as the sequela cynanche maligna. Two cases of croup supervening as an accessory disease in ulcerated sore throat are also related by Dr. Ferriar in his valuable paper on that subject. "Though there were large ulcerations in the tonsils," he observes, "there was nothing uncommon in the symptoms till the inflammation extended to the trachea, when faint, shrill coughing, hissing respiration, and restlessness came on, which were soon followed by death." Croup also, in some instances, is the attendant upon scarlatina.

In Dr. Cheyne's treatise before referred to, a case of scarlet fever is recorded, which proved fatal, in which the membrane was actually formed as in croup, and was removed after death by Dr. Rollo, Surgeon of Woolwich hospital. In some instances, especially where ulcerations take place in the larynx, croup also succeeds to *measles*. In a case related by Dr. Cheyne, it also succeeded to the secondary fever of small-pox; and by Dr. Underwood it has been known as the attendant upon the *putrid thrush*. Croup also, says Dr. Cheyne, very often supersedes a common catarrhal affection. In a singular instance, Dr. Ferriar, also observes, that he has seen pneumonic inflammation converted into a croup on the tenth day of the disease. Dr. Rush remarks, "I have seen it accompany as well as succeed the small-pox, measles, scar-

let fever, and aphthous sore-throat. In the late Dr. Foulke, it succeeded acute rheumatism. The late Dr. Sayre informed me he had seen it occur in a case of yellow fever in the year 1798."

With these facts before us, therefore, there appears to be just ground for dividing this disease into two species, viz. *idiopathic* and *symptomatic* croup: *idiopathic*, where the disease is primarily and exclusively seated in the trachea, bronchiæ, and surface of the lungs; *symptomatic*, where it is the consequence of other previous diseases.

It is asserted by some writers, but denied by others, that cynanche trachealis is an *infectious* disease. As the cynanche maligna and scarlatina are communicated by contagion or infection, doubtless they may also be so in their consequences; and in this way croup may be transferred by those diseases as the vehicle of communication. The cases related by Von Rosenstein, in evidence of the infectious nature of croup, were probably cases of cynanche maligna, similar to those described by Dr. Bard. We hence see the propriety of Dr. Cheyne's observation, that "when a physician has to visit more than one, with a croupy affection, in a family or neighbourhood, he ought carefully to examine the state of the fauces." But that idiopathic cynanche trachealis is infectious, I believe there can be no ground for supposing. I should as readily believe that an inflammation of the brain or of the pleura should be thus communicated, as an inflammation of the membrane lining the trachea; and I believe it may be safely asserted that the fact is otherwise. In the numerous families in which I have prescribed for this disease, I have never known it to be thus communicated, either to the attendants upon the sick or to the other children, even though sleeping in the same room, and frequently in the same bed: but I have more than once been called in the same night, to two children in the same family, both having been exposed to the same cause, and especially where there is a great predisposition to attacks of this disorder, as is the case in particular families. In these instances, as Dr. Thomas remarks, the attacks are generally less severe. I have never visited a child upwards of twelve years of age in this complaint, except where it had suffered previous attacks of it; yet in some instances, adults are the subjects of this disease. An instance of this, which can never be forgotten, is that which deprived our country and the world of one of their most illustrious citizens, George Washington.

Of the treatment to be adopted for the cure of *croup*, writers differ as widely as they do about the nature or character of the disease; but none, in my opinion, appear to have sufficiently discriminated between the different stages, in which the remedies they severally recommend ought to be employed; even Dr. Cheyne's late valuable work, which contains the best pathology of this disease, is in some degree defective in this respect. I have been led at the bed-side to distinguish *three* distinct stages in croup: the first may be denominated the *forming stage* of the disease; in this the affection is local; the irritation has not yet extended to the whole system; the child even sits laughing and playing upon the lap of its mother, manifesting a very unusual but morbid degree of exhilaration; its skin is cool and moist, its pulse not perceptibly accelerated: but its hoarse, hollow sounding, and frequently returning cough, its wheezing inspiration, its restlessness, and especially its cries after a fit of coughing, all denote to the physician and parent acquainted with the disease, the consequences that will ensue, if active means be not employed to prevent the *second*, or *fe-*

brile stage. In this stage the whole system partakes of the irritation; the pulse is frequent, the skin hot and dry, the respiration hurried, the tongue covered with the usual white fur indicative of inflammation, the lips and cheeks remarkably florid, the cough frequent, but attended with a more acute sound than that of the first stage; every inspiration too is attended with more uniform wheezing than that which appears in the first, when occasionally an interval occurs in which the child breathes as if in health. But in this second stage no such interval is perceived; the trachea, bronchiæ, and lungs become so surcharged by the circulating fluid, that the child has not even a momentary relief from its oppression; and in a short time, if left to itself, especially if the patient be plethoric, the countenance exhibits a purple, livid colour, not unlike that of apoplexy, and is even attended with a degree of stupor, or propensity to sleep. If the patient be now neglected, or the evacuations be sparing and insufficient, &c. effusion from the exhalent vessels opening into the windpipe, bronchiæ, and surface of the lungs, inevitably takes place. In the two former the effused matter assumes a membranous appearance, probably owing to the forcible passing and repassing of the air through those preternaturally constricted tubes; but in the lungs themselves it appears in the form of a viscid fluid partly resembling both phlegm and pus. When this effusion has actually taken place, the febrile symptoms sensibly abate, and sometimes disappear altogether, the child is also apparently free from pain, but it suffers violent paroxysms of cough and difficult breathing, attended with an irregular spasmodic respiration, as in asthma, or dropsy of the chest, and with similar intervals of ease. These paroxysms, in young children, continue but a few hours before dissolution. But in children arrived at eight or ten years of age, they frequently continue several days.

In some cases the impediment to inspiration, and the distress attending the paroxysms are so great, that the only position in which the patient can respire, is with the head thrown back. In this situation the trachea is extended, and thereby its capacity increased, and adapted to the membrane which it encloses. In some instances, before death, general convulsions ensue, which speedily terminate the sufferings of the patient. This stage, in which the membranous effusion takes place, I denominate the *membranous*, or *purulent stage:* from this advanced state of the disease recovery is so rare, that it is not to be expected; it might almost be denominated the *fatal* stage of croup. These distinctions, it is, in my opinion, important for the practitioner to keep in view, as they lead to important conclusions in practice.

They teach us, during the first or forming stage of this disease, to adopt the most active means of restoring the suppressed secretions of the trachea and surface of the lungs, and by open bowels and perspiration to guard against the general excitement of the system. For this purpose, when called to a patient labouring under the first symptoms, in which the disease appears to be confined to the parts primarily affected, it is my practice to administer an emetic composed of tartarized antimony and ipecacuanha. To a child under two years of age I direct from one to two grains of the emetic tartar, with from five to ten grains of ipecacuanha every fifteen minutes, until it operates to such a degree as to induce a plentiful secretion from the trachea and lungs. When the emetic has no other effect than to produce vomiting, I immediately direct the bowels to be emptied by the common injection, and a dose

of calomel from five to ten grains to be given, unless the child may be completely relieved: for it frequently happens that a nemetic alone, by restoring the excretions from the windpipe and lungs, and the other evacuations, by perspiration and stool which it creates, affords immediate relief, especially if the physician be called early in the disease.

But it too frequently happens, that many of the common family prescriptions are in the first instance employed, and much valuable time lost before the physician is called upon; in that case, if the febrile symptoms have already manifested themselves, other remedies are indicated. In this second stage of croup, such is the determination of the circulating fluids to the part affected, and such the general febrile excitement of the system, that the most efficient means of diminishing the plethora of the blood vessels, and of diverting the irritation from the part affected, become necessary. With this view, the patient should be bled freely, in proportion to its age and powers of constitution; say for a child under two years, from two to four ounces; from two to six years, from four to six or eight ounces; to be repeated as the urgency of the symptoms may require. Most writers recommend the blood to be taken from the jugular veins: as I have never, even in the youngest children, experienced any difficulty in opening a vein upon the back of the hand, and of drawing a sufficient quantity of blood from that part, especially after immersing the hand a short time in warm water, I have never had occasion to open a vein in the neck; and as the child is generally very restless in this disease, and there is on this account more hazard in opening one of the jugular veins than those on the back of the hand, I have uniformly preferred the latter. It is also preferable on other accounts: it is difficult to ascertain the quantity of blood drawn from the jugular; the vein cannot be so readily closed, and the orifice is apt to open afresh by a violent fit of coughing. After blood-letting generally some partial relief is immediately obtained; respiration is less frequent: the peculiar noise of inspiration is also diminished; the cough becomes more loose and yielding; the skin is rendered moist, and the pulse less tense and frequent. But these favourable symptoms are oftentimes deceptive, and of short duration: the cough, laboured respiration, and heat of skin, are perhaps all renewed in the course of an hour. In that case, the antimonial emetic must be immediately employed. Although the force of the disease may have been greatly subdued by blood-letting, the alarming symptoms so frequently return, that I am now in the constant practice of prescribing the emetic immediately after blood-letting has been performed, without waiting to ascertain the effects which the bleeding alone might produce: if, however, after the operation of the emetic, the symptoms still continue violent, I usually repeat the bleeding, immerse the patient in a warm bath, apply a large blister to the throat, covering the larynx and trachea, and administer a cathartic of calomel, from five to ten grains, repeating this medicine every two hours, until it produces some sensible effect in this respect, at the same time soliciting its operation upon the bowels by injections occasionally administered.

These several remedies having been employed, and having failed completely to subdue the febrile symptoms, and to divert the irritation from the trachea and lungs, I next direct small doses of calomel and James' powder, from two to five grains of each, to be given every two hours to a child under four years of age; but when sufficient evacuations from the bowels may have been procured, I frequently prescribe the antimo-

nial wine, or a solution of tartar emetic, in such doses as to excite a considerable degree of nausea and relaxation; with these I occasionally blend a small portion of laudanum, where it may be indicated either in consequence of the profuse evacuation by the bowels, or when the cough may be very harassing to the patient, which is sometimes the case when the febrile symptoms are greatly moderated; in other repects laudanum should be administered with great caution in this disease.

The physician is sometimes called upon at a late period of the disease, where the means which have been described have not been employed; or if they have been, may not have succeeded, and in which the third stage of the disease has become apparent. Respiration, as in the two preceding stages, is still laborious, accompanied with the same wheezing noise upon every inspiration; the cough also continues violent, without the least expectoration, and returns in paroxysms, in which the patient is threatened with immediate suffocation; the countenance exhibits a bluish livid appearance, at the same time that the patient manifests the greatest anxiety and distress; occasionally, however, it has intervals of ease, in which its sufferings are apparently inconsiderable; but these intervals are of short duration, and afford no prospect of relief, for the effusion before mentioned, and the consequent formation of a membranous matter lining the trachea and bronchiæ, have already taken place. In this stage of the disease, it has occasionally happened that portions of the membrane have been thrown off by coughing, by which the patient has happily been preserved.

Calomel, in small but repeated doses, squills, the syrup of onions, the seneka snake-root, ammoniac, and assafœtida, and the vapour of vinegar and water, are the medicines upon which I am inclined to place most reliance at this advanced period of the croup. As they are a class of remedies calculated to excite the secretion from the lungs, without impairing the general powers of the system, they afford, if steadily persisted in, the best means of loosening and of ejecting the membranous matter, as well as the fluid materials effused over the surface of the lungs. A case related by Dr. Rush, of the good effects of calomel in the advanced stage of croup, should incite us to the diligent use of this remedy, even after the effusion of the matter constituting the membrane has been ascertained to have taken place.

But these stimulant remedies, excepting calomel, the use of which in the first stages of croup, has already been noticed, should, in my opinion, be confined to the *third* stage of this disease.

Dr. Archer, of Maryland, has rendered an important service to medicine by introducing into general use the polygala senega, as a remedy in croup. Hitherto, however, it has certainly disappointed the expectations of most practitioners, because it has been prescribed indiscriminately in every stage of the disease; whereas, for the very reason that it is so useful in exciting the vessels of the trachea and lungs to a powerful excretion of the materials oppressing them in the last stage of croup, it is certainly a hazardous prescription when those organs are preternaturally excited, as they are both in the forming and febrile stages of this disease. For the same reason that stimulant remedies are thus indicated, blood-letting, emetics, the warm bath, and such other medicines as relax and debilitate the system, and which were indicated during the two first stages, ought, in this, to be prohibited; for in this debilitated state of the system they not only diminish the power of secre-

tion, but of ejecting the matter secreted. If circumstances, however, should indicate an emetic in this stage of the disease, and the decoction of seneka should prove insufficient, the sulphate of zinc or copper is certainly preferable to that of antimony or ipecacuanha, the former being less debilitating, while they afford all the advantage which can be obtained from the mechanical operation of vomiting, and which is all that can be desired at this advanced period of the disease : at this time it is also necessary to sustain the strength of the patient by more nutritious food than is proper in the first stages ; a cup of sago, arrow root, chicken soup, or weak wine whey, is now indicated ; but the latter should be carefully abstained from during the inflammatory stages of this disease, when the patient should be confined to such drinks and nourishment as are least calculated to excite the system. Seeing then that so little remains to be done in the third stage of croup, we are taught the importance of very active treatment during the first and second stages of the disorder.

In a case of idiopathic croup which fell within the practice of Dr. Francis of this city, upon the afternoon of the third day of the disease, the salutary operation of the vitriolic emetics was happily manifested, even under the most discouraging circumstances. The patient was a female child about two years of age : through neglect the disorder had uninterruptedly run its course, and had advanced to what I have termed the third stage, marked with all the symptoms mentioned as characteristic of that stage of croup. Little or no hopes being entertained of its recovery, a strong solution of the sulphate of zinc, and afterward of the sulphate of copper, were freely and repeatedly given, and the excitement of the system roused by blisters, a stimulating warm bath, and enemata. These means were persisted in by Dr. F. for twenty hours, when the membrane was finally detached in pieces and thrown up by vomiting ; after which the patient was rapidly restored.

Dr. Francis informs me, that he has recently been called to two other cases of croup, in the advanced stage of the complaint, and after the formation of the membrane ; in which he pursued the same practice by the vitriolic emetics, and with the same happy result.

The sulphuret of potash, commonly called hepar sulphuris, has recently been strongly recommended in France as successful in the treatment of croup. It is a remedy upon which I am inclined to place but very little dependence.

Generally speaking, I consider croup in its early stage as much under the control of the remedies which have been enumerated, as a pleurisy, or any other inflammatory disease. But as Dr. Ferriar justly remarks, " if the alarming symptoms are not mitigated during the first six hours, the disease will generally prove fatal." *Med. Hist. and Reflections, vol.* 3.*

Peripneumonia Typhodes.

Notwithstanding what has been thus advanced relative to the treatment of fevers of the typhoid character in general, I am induced to offer a few additional remarks on that peculiar mixed type of disease, which has appeared in various districts of the United States, but more

* See additional remarks on Croup in the Editor's Essays, vol. 2. p. 169.

particularly in the eastern and middle sections of the Union ; and which under the different names of *malignant pleurisy, petechial or spotted fever, bilious epidemic fever, bilious pneumonia, &c.* has given origin to such discordancy of opinions as to its nature, and which disorder, wherever it has prevailed, has been accompanied by a most alarming mortality. The name *peripneumonia typhodes*, seems to me to convey a more accurate idea of its character than any appellation by which it has been designated, and I shall accordingly notice it under that denomination.

This disease is not a " new calamity," an " unknown epidemic," as it has been represented by some writers. On the contrary, it has been well described by Sauvages,* Huxham, and others ; by the former, under the very appropriate appellation of *peripneumonia typhodes.* Nor is this a new disease in the United States. In the first volume of the American Medical and Philosophical Register, the late Dr. John Bard, of this city, has given an account of a disorder which prevailed on Long Island, in the winter of 1749, and which, in its essential symptoms, corresponds with the epidemic lately prevalent in this state. Dr. Bard has termed the complaint the " *malignant pleurisy.*" In the second volume of the Medical Repository (first series), the same disease is noticed by Dr. Hugh Williamson, as it prevailed in North Carolina, in the year 1792. In the southern states, it is commonly called "*pleurisy in the head,*" in consequence of the violent pain in the head, which frequently attends the disease in that climate. Malignant Pleurisy, or rather *typhus peripneumonia* well expresses the mixed character of this disease ; for at the same time that it is attended with inflammation of the lungs, and in some instances with inflammation of the brain, the general affection of the whole system is certainly that of *typhus fever.*

That inflammation of the lungs frequently constitutes a part of the disease is manifest, not only from the presence of those symptoms usually attendant upon pneumonic inflammation, viz. cough, pain in the chest, especially upon taking a full inspiration, expectoration tinged with blood in the early stage of the complaint ; but it is also evident from the phenomena presented upon an examination of the body after death ; the overloaded state of the vessels of the lungs, the large effusion of serum and sometimes purulent matter, the adhesions found between the membranes covering the lungs, and those lining the chest, all clearly show that the patient has been destroyed by such inflammation.† In like manner, in some cases, the whole force of the disease is vented upon the brain, producing similar phenomena in that organ ; on the other hand, the usual symptoms of a putrescent state of body, the petechiæ, blotches, hæmorrhages in the latter stage of the disease, the offensive state of the excretions in general, and great prostration of the powers of life, which rapidly ensues, no less declare the enfeebled and vitiated state of the whole habit. There are therefore two opposite conditions of body to contend with : *local inflammation* on the one hand, and a *typhoid state of the whole system* on the other. The causes of the disease are no less compounded than the disease itself. The local inflammatory affections are probably occasioned by the *sensible changes* of the atmosphere, while the typhoid character of the disease is derived from

* See Nosologia Methodica, vol. 1.

† See Report of the Mass. Med. Society, and Dr. Hudson's letter on the prevailing epidemic ; see also Dr. Low's account of this disease, as it lately prevailed in Albany—American Medical and Philosophical Register, vol. 4.

an *epidemic constitution of the air*, the same which has given rise to the *typhus petechialis*, or *spotted fever*, which has prevailed for some time past in our northern and eastern states, and which is doubtless a similar disease, with the exception, that the peripneumonic epidemic is complicated with the symptoms of local inflammation of the chest, brain, throat, &c. the effect of cold at the season of the year when it prevails. With this view of the *mixed* nature of the disease, and of the combined causes which have produced it, we are prepared to expect the various and opposite opinions and modes of practice which have been adopted by different physicians. We accordingly find some prescribing the strict antiphlogistic treatment by large and repeated blood-letting, active cathartics, and other depleting remedies, treating the disease as purely inflammatory. On the other hand, we find another class of practitioners pursuing the opposite course of exciting the system by the most powerful and diffusible stimuli, to counteract the putrescent state of body; alleging, that it is exclusively a putrid disease, and only to be controlled by antiseptics, and the avoidance of all those means which are calculated to debilitate the system. As far as I have seen the disease, they are both wrong; the indiscriminate use of the lancet recommended by some, is, in my opinion, an additional source of the mortality of the disease.

On the other hand, the practice of administering brandy and other ardent spirits, in the quantity they have been lately prescribed, is truly adding fuel to the flame that is already consuming the patient, and cannot be justified either by principle or practice. But the prudent physician will avoid both these extremes. In the young and athletic, he will prevent the brain from being inundated with blood, by the early and judicious use of the lancet, blisters, and other means usually prescribed for diminishing inflammation: keeping in view the age, strength, constitution of his patient, and the general symptoms indicating a putrescent state of the system. On the contrary, in feeble old age, in the habit debilitated by disease, or intemperance, in which those inflammatory symptoms are less violent, and the tendency to putrefaction is most predominant, he will depend chiefly on those means usually resorted to for the purpose of promoting the perspiration, and other excretions, at the same time, that, by suitable antiseptic drinks and nourishment, he will guard against that debility which so rapidly ensues in this condition of the system. He will in such cases, of course, carefully abstain from, or cautiously make use of, blood-letting, and other depleting remedies. But he will certainly not effect the first purpose, by the excessive use of brandy and ardent spirits. So far from promoting the excretions of the system, they actually restrain those very evacuations which it should be our object to promote, and by which alone we are enabled to counteract the typhoid state of body, in this, or any other febrile disease.

As a substitute, therefore, for this stimulant mode of treatment in those cases where this typhoid tendency prevails, we are forbidden the use of the lancet and other depleting remedies, or where the symptoms of local inflammation are so mild that they are not indicated, let me recommend, after emptying the bowels by an enema, or *mild* purgative, to make free use of the *warm-bath*, *fomentations* of vinegar and water to the extremities, the liberal use of the infusion of *snake-root*, the *eupatorium*, and wine whey in very debilitated habits, or where the powers of life are much reduced, in order thereby to procure a plentiful perspiration. By

this evacuation we not only counteract the general typhoid state of the system, but we at the same time diminish, and in some cases, totally remove the local irritation, which affects the lungs or other organs involved in the disease.

For further information on the subject of the pneumonia typhodes, see the luminous Report of the Massachusett's Medical Society, an abstract of which may be found in the American Medical and Philosophical Register, vol. 1 ; Dr. Low's Account of the Epidemic in vol. 4, of the same work, and the Report of the Saratoga County Medical Society.

Phthisis Pulmonalis.

The chapter of our author on pulmonary consumption is upon the whole extremely satifactory ; though it is to be wished he had more forcibly insisted upon the division of the disease into two stages, a principle all-important for the practitioner to keep in view. The older as well as the more modern writers have attempted to describe various species of the disorder unnecessary here to enumerate. In my opinion, the best distinction that can be made in pulmonary consumption will be to divide it into two stages, the *acute* and the *chronic*, analogous to the arrangement of Morton into the *incipiens* and *confirmata*. Acute and chronic are preferable terms, as they convey a correct idea of the nature of the inflammation attending upon the first stage of phthisis, and of the termination of such inflammation in the last stage, in which, either ulceration or an excessive excretion of pus takes place. For this reason too I have thought proper to give it a place among the phlegmasiæ, instead of considering it as one of the hæmorrhagies, in which order it is arranged by Dr. Cullen.

The causes of phthisis pulmonalis are pretty amply noticed by Dr. Thomas ; and, from all that can be adduced, I think the disorder on the increase in our own country as well as in Great Britain. These causes, however, are not exactly in both countries the same ; with the increase of manufacturing establishments in England, we find an increase of the evils which induce pulmonary disorders ; and of these evils, scrofula may properly be considered among the principal. In the United States scrofula is comparatively little known ; but while we admit the influence of particular employments and modes of living in inducing consumption, this disease in most instances in this country, may be ascribed to the sudden vicissitudes we experience in this climate, particularly on the sea-board ; to imprudence in dress, and improprieties in the use of ardent drinks, and other species of dissipation. A common catarrh especially if frequently renewed, may be placed at the head of the causes of the disorder in this country ; it is one of those causes too, which, while it attracts the least attention, commonly does the greatest mischief.

The inflammatory character of the forming stage of pulmonary consumption cannot be too constantly kept in view, and the treatment indicated for the removal of other inflammatory affections of the chest will be found to be most successful in this more insidious disease. In the quarterly reports on the diseases of this city, I have already noticed this point of practice. " We have in many instances employed blood-letting with the most happy effects in many cases of incipient *phthisis*, even

where strong hereditary predisposition existed. Indeed, we are induced, from some late observations on this subject, to express the opinion that in the commencement of phthisis, as in peripneumony, blood-letting is not sufficiently employed, but is too frequently neglected until the inflammation has proceeded so far that suppuration becomes inevitable.—Nor do physicians in general appear to have been sufficiently attentive in describing the symptoms characteristic of the first or inflammatory stage of phthisis, and, consequently, have been regardless of that active antiphlogistic treatment which alone can prevent the tuberculous or suppurative stage. Inasmuch as suppuration, or a purulent secretion from the lungs necessarily implies preceding inflammation, we conceive too early attention cannot be given to the premonitory symptoms which announce the inflammatory stage, but which are frequently so inconsiderable, being seated in the less sensible, the cellular portion of the lungs, that both physician and patient are alike regardless of the present symptoms, and of the consequences to which they lead. Instead, therefore, of trusting to *syrups*, *anodynes*, *pectorals*, *ptisans*, or the *Iceland moss*, to allay the hacking cough and pains in the chest which indicate the first approach of the disease, we earnestly recommend the same active treatment by blood-letting, blisters, and other means of diminishing excitement, as are employed in the treatment of a pleurisy, or any other acute inflammation; and we could add, in confirmation of this view of the subject, many recent cases in which the practice here recommended has been attended with the most beneficial results."—*Vide. Amer. Med. & Phil. Reg.*

Much might here be said of the utility of mild emetics in the forming stage of phthisis, given occasionally after blood-letting, and other evacuants have been employed. But recommended as they are by Dr. Reid, indiscriminately in all stages of the disease, they cannot fail to do serious mischief.

During the two last years of my attendence at the New York hospital, as well as in private practice, I have made use of the Prussic acid in many cases of confirmed Phthisis.

In some instances this medicine was exhibited to the extent of sixty or eighty drops in twenty-four hours, but in no one instance has decided benefit been obtained from its use; on the contrary, in a majority of the cases in which it was administered, it rapidly prostrated the powers of life without an evident abatement of the cough, expectoration, fever, or night-sweats.

In some few instances in the private practice of others, I am told it has been found useful, and has effected an entire cure; but from my own observation, I cannot bear testimony to its use: like the fox-glove it exercises a deleterious influence upon the system, without effecting a beneficial change in the character of the disease.

The reader will advert with practical advantage to "Thoughts on Pulmonary Consumption" by Dr. Rush, in the Medical Inquiries and Observations.

Enteritis.

In the treatment of this disease, the author justly places his great dependence upon the free and frequent use of blood-letting. When obsti-

nate costiveness exists, calomel combined with small portions of opium, may be given to a large extent, and mild enemata administered. I am inclined to place little reliance upon injections of tobacco smoke, and should be extremely guarded in the use of cold applications. Indeed in all cases of local inflammation, they seem calculated to augment the existing evils : tepid fomentations of vinegar and water may be used with beneficial consequences. See further remarks on this subject in Amer. Med. and Philosophical Register, vol. 4.—Sometimes in enteritis an obstinate obstruction of the bowels takes place and a vomiting of feculent matter, arising from a peculiar malformation of the intestines. A singular case of this sort occurred in our practice, and is related by Dr. Francis, in the Amer. Med. and Philosophical Register, vol. 1st. in which a portion of the intestine, attaching itself to the umbilicus, formed a union between it and the intestinal canal : this appendix was observed to be a diverticulum from the ilium : the cure of cases of this nature is beyond the power of medical aid.

Rheumatism.

Notwithstanding the weight of testimony which accompanies the recommendation of the venerable Dr. Haygarth, in behalf of the cinchona, in acute rheumatism, I cannot assent to the propriety of the practice. The means adopted by Dr. Hamilton will, I believe, be by far more successful in the treatment of this disease in this climate.

After active depletion the Dover's powder is a valuable prescription. When enlargements of the ligaments, or of particular joints or extremities, have taken place, among the most efficient measures of relief may be enumerated the repeated application of blisters, and the use of the unguentum antim. tart.—The ammoniated tincture of guaiacum is a potent, and very often a successful remedy, in the chronic form of rheumatism. My experience during the last two years of my attendance at the New York hospital enables me to detail many cases of the beneficial results of the practice inculcated by Dr. Balfour of Edinburgh.

Gout.

Gout may justly be placed among the class of phlegmasiæ, and as far as I have seen the disease, in its various forms, I have been led to the following conclusions.

1st. That gout is not an hereditary disease in the sense in which it is usually considered ; that it is only hereditary as far as fortune, and its attendants, ease, indolence, luxury, habits of intemperance, both in eating and drinking, and that predisposition which arises from a strong and vigorous constitution, are hereditary. Accordingly, it is observed by Hoffman, that " many have lost the gout with their fortunes," being compelled to obtain their subsistence by the sweat of their brow. Similar facts are related by Van Swieten and Schenckius. Hence too, females, who rarely indulge in the excess either of the bottle or the table, are as rarely the subjects of this disease ; and when they are so, it is usually after the cessation of the menses, and is then, for the most

part, induced by the excessive use of wine or ardent spirits. It has also been observed, that in those families where it is pronounced to be hereditary, that it is uniformly earned by the descendant, and that it is not an exclusive patrimony: accordingly it happens that not only the females, but such of the male members of the same family, as lead lives of temperance and industry, escape the disease. For the same reason gout never appears in early life, except when induced by indolence, intemperance, and dissipation.

2d. That gout takes place for the most part in the sanguine temperament, in the plethoric habit of body, and is exclusively an inflammatory disease of the whole system, as well as of the part affected.

3d. That its associate of vicarious diseases, apoplexy, palsy, angina pectoris, asthma, habitual catarrh, eruptions on the skin, obstructed viscera, and dropsy, arise from the same habit of body, and from the same causes.

4th. That the deposites of saline or earthy matter, which take place upon the joints in gout and rheumatism, in the kidneys and bladder occasioning stone and gravel, in the brain of apoplectics, in the arteries of persons advanced in life, in the coronary vessels and valves of the heart, as frequently attendant upon angina pectoris and other diseases of that organ,* have the same common origin, and that these extravasations are usually the effects of an overloaded state of the blood-vessels.

5th. That although the same earthy or saline materials exist in the blood in a state of health, and are constantly passing off in our excretions, as appears from the observations and experiments of Scheele, Woolaston, Brande, Pearson, and others, they are in no instances the cause of gout, but when deposited upon the joints in that disease, or upon other parts of the body, that such deposites are the effects of plethora, the parent of both.

6th. That the *predisposing* causes of gout are the excessive use of wine, ardent spirits, animal food, the condiments of the table, and the neglect of the exercise necessary to counteract their effects upon the constitution. While the check of the excretion by the cold of autumn and winter, or the sudden impetus given to the circulation by the returning spring, prove the most usual exciting causes of this disease. Hence we find gout, like rheumatism and other inflammatory diseases, to be the attendants upon autumn, winter, and spring, but rarely to be met with during the summer season, when our diet consists of a large proportion of vegetable food, and the excretions, especially by the surface, are most abundant; hence too, it is observed, that persons who are remarkable for their excessive discharges by the skin, are rarely the subjects of gout, even though the usual causes of this disease are at the same time indulged in to a great degree.

7th. That as the causes of gout are *intemperance* and *indolence*, the best means of preventing this disease may be summed up in their immediate antidotes, *temperance* and *exercise*; but where the patient has not resolution enough to withstand the temptations of the table, and is unable to take the necessary exercise, that occasional evacuation by the lancet, and other means of distinguishing the fulness and excitement of the vessels, should be employed.

* See Warren's valuable work on the Diseases of the Heart: see also Bailie's Morbid Anatomy.

8th. That the most effectual means of removing the inflammatory action attendant upon the first stage of the paroxysm of gout, consists in depletion by the *lancet*, *cathartics*, and such remedies as operate by restoring the excretions from the surface of the body, the physician paying due regard, in the use of these means, to the constitution of the patient, his time of life, and season of the year. That in correspondence with the use of these remedies, both the diet and the regimen of the patient should be simple and strictly antiphlogistic.

9th. That during the febrile stage of the paroxysm, the part or parts affected should be lightly covered with soft flannel, or carded cotton, for the purpose of soothing the existing irritation, and of promoting a perspiration from their surface ; but that both the practice of loading the limb with the accustomed strata of flannel, and thereby of adding to the heat and inflammation of the parts, and that of applying cold water, or other cold applications to the affected limb, are alike prejudicial and dangerous, and are equally to be reprobated.

10th. That at the termination of the febrile or inflammatory stage of gout, as of other inflammatory diseases, the same means of restoring the tone of the system are indicated, viz. chalybeates, bitters, the moderate use of animal food, wine, porter, exercise, and in the summer season, sea bathing.

The eau medicinale of Husson, which has been employed by some practitioners in the treatment of gout, seems already to have lost much of the renown it so lately acquired, as a safe and successful remedy in this disorder. Like certain other vigorous remedies, it is frequently uncertain in the extent of its operation : in many cases it has produced injurious effects, and in others, it appears to have occasioned death. Instances of its fatal effects have been published in the London and Edinburgh Journals, by Mr. Ring.—I do not know that the use of this nostrum, in this country, has in any instance of gout been followed by so serious a result, though I am assured it has occasionally produced a considerable aggravation of the disease, but more frequently proved altogether inadequate to a mitigation of its symptoms.

I am aware that the opinions which I have expressed, both as to the exclusive inflammatory character of gout, and especially the mode of treatment I have advised, will be considered as heresies by physicians in general, as well as by their patients ; I would however observe, that the treatment recommended has not only been pursued in my own private practice, with the most salutary effects, but that the use of blood-letting in particular, which it is more particularly my object to recommend in the treatment of gout, has long since been sanctioned by the truly respectable names of Sydenham, Huxham, Cullen, Musgrave, Macbride, Hamilton of Lynn, and our late distinguished countryman, Dr. Rush.*

Carbuncle, or Anthrax.

Although this disease was well known to the ancients,† has been well described by modern writers,‡ and is of so frequent occurrence as to fall

* See additional observations on Gout in the Editor's Essays vol. 2. p. 445.

† See Galen, Celsus, Fabricius.

‡ See Wiseman, Bromfield, Kirkland, David, Prix de L'Academie Royale de Chirurgie, tom. iv.

Pouteau Œuvres posthumes, Pearson's Surgery, Cooper's Surgery,

under the notice of most practitioners ; it is no less true, that there is at this day great difference of opinion as to the mode of treating it. It will be recollected, that, but a few years since, it was the subject of a public controversy in this city ; and in Europe, surgeons are no less divided in the treatment of this disease than they are in this country.

In 1793, I attended a case of carbuncle, in consultation with two of our oldest and most respectable practitioners. The inflammation exhibited by the tumour appeared so active, that we unanimously agreed on the application of lead-water ; poultices of bread and milk ; an abstemious diet with the internal use of depleting remedies. Under this treatment, the febrile symptoms increased ; the tumour extended ; sphacelus ensued ; and, in a few days, terminated in the death of the patient. The appearances, progress, and termination of this case, led me to the resolution to employ a very different treatment in those cases which might afterwards fall under my notice. Since that period, it has been my practice to support the strength of my patient by a nutritious and stimulant diet, and the free use of bark and wine ; at the same time preserving the tone and action of the part itself, by frequently washing the tumour with spirits or brandy, and by the constant application of a poultice composed of *bark and yest*. Finding these remedies successful in many instances which have fallen under my care, I shall detail a case, in which the practice was pursued, under the most unpromising circumstances, and therefore is better calculated to establish the principles upon which the cure of this disease is to be conducted ; especially when it occurs in advanced life, and is preceded by, or accompanied with, a scorbutic or vitiated habit of body, as, I believe, is most usually the case.

On the 5th of March, 1808, I was called to Elizabeth-town, in New Jersey, to see Mr. John Hartshorne, aged 84, then on a visit to the family of Mr. Thomas Eddy.

He was extremely debilitated, and suffering much distress, from a tumour on the small of his back, which had been of several days continuance.

Upon inquiring into the history of the case, I was informed that the tumour, in the first instance, appeared like a common boil ; but having been preceded by several smaller ones, and an eruption on the skin, it excited very little attention on the part of his friends. It, however, very soon was attended with an acute burning pain, and began to spread, the adjacent part assuming a deep red or purple colour. The family physician was called, who at that time, was not acquainted with the peculiar character of this disease, having never met with it before in his practice, and therefore, very naturally treated it as a common phlegmon ; applying the common cataplasm of bread and milk, for the purpose of inducing suppuration, together with the internal use of those remedies that are usually prescribed for the removal of simple inflammatory tumours.

The inflammation continued to extend, attended with a severe pain in the part, fever, restlessness, loss of sleep, and occasional delirium. In this state I found him. The tumour appeared about six inches in diameter ; of a dark purple, livid colour ; extremely painful and sensible to the touch ; in the centre of the swelling the colour was still darker, and was attended with a discharge of a thin acrid humour, as is usual in erysipelatous inflammation, altogether exhibiting the symptoms of approaching sphacelus ; his pulse was small and frequent ; his skin pre-

ternaturally heated, and attended with a sense of itching over the whole surface of the body: his tongue was moist, but foul; his bowels were costive, except when relieved by injections, which were occasionally administered; his urine was sparing in quantity and high coloured.

Under these circumstances of a typhoid state of fever, attended with a gangrenous appearance of the tumour, we advised the part affected to be washed with a strong solution of soap and water, rendered more stimulant by the addition of a small quantity of rum or brandy, and afterwards a cataplasm of bark and yest to be applied over the whole surface of the tumour; the same to be renewed every four hours, making use of fresh yest at each application: a wine-glassful of a decoction of bark and Virginia snake root, was also directed to be taken every two hours, together with the free use of porter, panada made strong with wine, and soup, as his nourishments.

As he suffered a great deal of pain, he was also directed to take occasionally, throughout the day, about twenty-five drops of laudanum, and at night an anodyne draught, if otherwise he was unable to sleep. These directions were faithfully complied with.

Upon visiting him on the 7th, his symptoms were much changed for the better. The appearance of the tumour was more healthy and assumed a brighter colour, but was somewhat increased in size, and in the extent of the inflammation; his pulse was more full, and less frequent; his strength was also improved; he suffered less pain, and discovered a greater inclination for nourishment than he had before done. As he was fond of eggs and oysters, they were also allowed him. All the other remedies were directed to be continued.

I did not see him again until the 12th; in the mean time the bark and yest poultice had been steadily continued, with the decoction of snake-root, a generous diet, the liberal use of wine, and anodynes whenever he suffered much pain, or was deprived of his rest. At this time the tumour began to discharge, at different parts of its surface, a very healthy* pus; the apertures were small, but numerous, resembling the cells of a sponge, or honey-comb. It continued thus to discharge for several days.

We did not think it necessary to enlarge the openings, through which the matter was evacuated as directed by Mr. Kirkland, David,† Mr. Cooper,‡ and the Editors of the Edinburgh Practice of Physic and Surgery. In cases where the ulceration may be of greater extent than in the present instance, and the quantity of matter very great, this practice may be advisable and necessary. About the 22d, we directed the poultice to be omitted, and the wound to be dressed with simple cerate. Within twenty-four hours after this change in the application, the quality of the discharge was sensibly altered. Instead of a healthy pus, a thin sanies, as in the beginning of the disease, was again poured out. The complexion of the tumour also assumed a darker appearance; and his friends again became alarmed for his safety.

* I am not a little surprised at the observation of John Pearson (see Principles of Surgery) and the Editors of the Edinburgh Practice of Physic and Surgery, when they remark, that "an Anthrax never evacuates a laudable pus." Wiseman also observes, "that he never saw a true carbuncle suppurate." On the contrary, I am inclined to believe that the wound never heals without this change in the quality of the discharge.

† See a very valuable memoir on abscess, by this writer, in the Memoires de l'Acad. de Chir. tom. iv.

‡ See First Lines of the Practice of Surgery.

Finding these changes, we again advised the tumour and neighbouring parts to be bathed with brandy, and the poultice of bark and yest to be renewed.

From this time the wound recovered its healthy aspect, and continued to heal, without an unpleasant symptom. When the discharge totally ceased, and the wound had become cicatrized, a light compress of linen, wet with rum or brandy, was directed to be applied to the yet tender surface of the part affected. As he still continued to complain of an itching over the whole surface of the body, we put him on the use of the decoction of sarsaparilla and guaiac.

On the 7th of April the cure was completed, when he returned to his family, in Monmouth.

If it were necessary, I could here add the history of another very formidable instance of this disease, as it occurred in the family of the late British Consul, Col. Barclay; in which precisely the same treatment was pursued, and with the same happy result.

Measles.

The author adverts to a spurious form of this disease noticed by the late Dr. Willan, and to cases of an analogous nature which formerly appeared in New York. An eruptive disease in many respects resembling the measles, prevailed to a considerable extent in this city in the earlier part of the summer of 1813, as published in the Quarterly Reports on the diseases of New York for that time. (Amer. Med. and Phil. Register, vol. 4.) Such was the resemblance this affection bore to measles in its invasion, the character and extent of the eruption, that by many it was called the French measles. It however differed from the measles (rubeola vulgaris) in several particulars. The fever preceding the eruption was very inconsiderable in degree and of short duration, not more than twenty-four hours: and in some few cases the eruption appeared without any preceding fever: the eruption itself generally disappeared at the end of the second or beginning of the third day; the eyes were rarely affected with it as in measles, and in no case, as in the latter disease, was it attended with a cough or oppression, excepting such as are attendant upon most febrile complaints. In several cases this disease occurred in children, who sometime afterwards were attacked with the measles, attended with all its characteristic symptoms; and in other instances, adults who were certainly known to have had the measles in early life, were the subjects of this eruptive complaint. It was doubtless the same species of disease that has been noticed by Dr. Willan under the appellation of *rubeola sine catarrho*, "which" says that author, "does not appear to emancipate the constitution from the power of contagion, nor to prevent the accession of the rubeola vulgaris at a future period, for" he adds, "two instances of this recurrence being among my own children, and at an interval of two years, I can decidedly answer." It is probably the same species of rubeola that has been observed by Rosen, Morton, Tozzetti, Robordiere, and Professor Spielman, and which has given rise to the opinion that the real measles, rubeola vulgaris, may be taken a second time.

Cholera Morbus.

This and bilious colic are among the most frequent of the disorders of our summer season: they often arise from imprudent exposure, when heated, to a stream of cold air, and to the sudden changes of weather. Although generally observed as complaints of the bowels, they may with more propriety be considered as diseases of the whole system, and frequently as connected with a febrile state of the body, and in many instances with plethora of the blood-vessels. The habits of body most subject to attacks of this sort, viz. those of a gross, lax fibre, who live a sedentary life, are accustomed to full feeding, and to the free use of stimulating drinks: the symptoms which precede an attack of this disease, such as pains in the head, vertigo, propensity to sleep, with a sense of numbness in the extremities; the exciting causes, viz. excessive heat, exposure to a stream of air, or cold applied to the extremities when the body is heated, the sudden removal of an accustomed piece of clothing, as flannel next the skin; the immense discharge of fluids from the liver and serous vessels opening into the intestinal canal, which constitutes cholera, the irritation of the abdominal viscera in bilious colic, all lead to the opinion that they are frequently diseases of the whole system venting themselves by these evacuations. The excessive hæmorrhages which frequently take place from the liver, stomach, and intestines, during the hot season of the year, are no less favourable to this opinion.

The observations made by Dr. Henry Dewar,* upon the connexion which subsists between disorders of the bowels and other diseases, such as pneumonia, rheumatism, and eruptive complaints, and their alternate operation upon the system, serve to show that the former, like the latter, are dependent upon the general condition of the blood-vessels.—Blood-letting is also found, as in cases of hæmorrhage, among the most effectual means of restraining those excessive bilious and serous secretions which occur at this season of the year. It is not to be understood that the lancet is to be had recourse to indiscriminately in every case of cholera. The prostration of strength induced by the evacuations spontaneously produced, as in cases of hæmorrhage, will forbid the use of this remedy. But where the disease occurs under the circumstances before stated, in a full habit of body, and the physician is called before great debility has come on, blood-letting, as in restraining sanguineous discharges from the larger vessels, will frequently produce immediate relief, by diminishing the excessive evacuation which takes place from the liver and serous vessels of the intestinal canal in these diseases. Cases of this sort have frequently fallen under my observation, in which I have been compelled to employ the lancet, where the remedies ordinarily prescribed, viz. rhubarb, magnesia, emetics, &c. have been administered without success. In those cases attended with great pain in the stomach and bowels, or with spasmodic affections of this organ, the warm bath and blisters have also been applied, in conjunction with the lancet, with manifest advantage, and probably have afforded relief upon the same principle, by diverting the irritation from the internal organs to the external surface of the body.

* See observations on Diarrhœa and Dysentery, as they appeared in the British Campaign of Egypt, in 1801.

Diabetes.

As far as experience enables me to decide, diabetes depends primarily upon a diseased action of the digestive organs, or a want of tone in the assimilating powers of the system: the kidneys are secondarily affected. The stomach may become impaired from various causes: in four cases out of five of diabetes which have come under my notice, this condition of the stomach was produced by the intemperate use of ardent spirits: and in three other patients, by the immoderate use of fruits, and confinement to a vegetable diet. Sydenham was the first who considered it a disease of debility, in which the system was unable to assimilate the nourishment to itself, a *fault in the assimilating process;* but he did not consider it an idiopathic affection. The late Dr. Ferriar adopted the same belief, that it is a disease of pure debility, but supposed at the same time some *local* disorder in the kidneys:—in the last communication I received from him he retracts this opinion.

That the kidneys, because they are the channel or outlet of the disease, are the seat of its proximate cause, is far from conclusive reasoning. We do not infer that the kidneys are diseased, because in *jaundice* they pour out more or less of bile.

The most successful treatment of diabetes is that originally proposed by Sydenham: the use of animal food, and abstinence from all vegetables and fruits. In his letter to Dr. Brady, he even particularizes the meats; viz. such as are of easy digestion, "veal, mutton, and the like." Upon the principle of correcting the acetous or fermentative process in the stomach, Dr. Rolla has recommended the hepatized ammonia. But this medicine is so nauseating and debilitating to the already debilitated stomach, that it cannot but fail of doing more harm than good. Ferriar judiciously prescribes, beside animal food, various tonics, as bark, bitters, chalybeates, &c. and in the 4th vol. of his Med. Histories and Reflections, he has published details of thirteen cases of which he kept minutes; ten of these recovered, and two were relieved. In the case of a child recently under my care, the disease was removed by animal food alone.

In the third volume of the Medico-Chirurgical Transactions, Dr. Bostock, of Liverpool, has offered some interesting observations on *Diabetes Insipidus*. This disorder, though but seldom noticed, Dr. Bostock is inclined to believe, is of more frequent occurrence than is generally imagined. In the case, the particulars of which are noticed in the work just mentioned, Dr. Bostock effected a cure by the use of preparations of iron and the warm bath.

Obstipatio.

I have no experience of the effect of carbon or charcoal for the removal of costiveness. When the ordinary means have failed, I have always had recourse to calomel, given in small and frequent doses, until the gums have become affected. In the Annals of Medicine for 1796, published at Edinburgh, I inserted a case of obstinate constipation of the bowels, which continued twenty-two days, and was finally removed by calomel. The patient took, besides other medicine, this preparation of Mercury to the extent of four hundred and eighty grains.

Ischuria.

In addition to the means pointed out by our author, and in confirmation of the advantages derived from producing great nausea and relaxation, such as are sometimes the effect of blood-letting, warm bathing, tobacco injections, and of the muriated tincture of iron, it may be observed that great benefit has been also experienced in many cases, in the New York Hospital, from the exhibition of a solution of tartarized antimony given in nauseating doses, and that this medicine has in some cases afforded relief where the former have failed.

Apoplexy.

In this climate numerous opportunities occur of seeing this disease, and cases of it are of most frequent occurrence during the great heat of summer and the severe cold of winter. Besides the usual depletion had recourse to, it is worthy of remark, that immediately after the lancet, cupping, and other means have been employed to diminish the pressure on the brain, the powers of life have in many instances been restored by the free use of the volatile alkali given internally, and applied externally so as to excite vesications. The dissections noticed by Mr. Abernethy in his work on the Diseases of the Head, induce the belief that even in sanguineous apoplexy, where extravasations may have taken place, as is proved by the apoplectic cells found in the brain after death, that recovery is not to be despaired of. In the spring of 1813, I had occasion to see a fatal case of this disease in a gentleman whom, in conjunction with Dr. Francis, I had attended for three preceding years in repeated and violent attacks. The following appearances observed upon dissection, clearly show both the exciting cause of his last fatal illness, and the impressions left by the paroxysms he had formerly sustained. Dr. J. A. Smith, late professor of Anatomy in the College of Physicians and Surgeons,* who, at my particular request examined the brain, favoured me at the time with the following memoranda:

"The vessels of the pia mater contained less blood than usual; a considerable effusion had taken place between that membrane and the tunica arachnoidea. The substance of the brain was softer than I ever recollect to have seen it in a person so recently dead: he was examined about six hours after his death. There was rather more water than usual in the ventricles. In the middle of the right hemisphere of the cerebrum, a cell was discovered like those described by Mr. Abernethy, and a much larger one of the same kind was afterwards found in the middle lobe of the cerebrum on the opposite side. The plexus choroides adhered slightly to the left thalamus, which appeared of a dusky red colour, and upon cutting into it there was found a considerable quantity of effused, coagulated blood. This had, no doubt, been the cause of the patient's death. The effusion and cell last mentioned, are completely shown in a preparation which I have made of the parts."

* President of the College of William and Mary, Virginia.

For an ample and most interesting view of apoplexy and its kindred diseases, the reader will consult the late work of Dr. Cooke, and the observations of Dr. Armstrong.

Dyspepsia.

Under this head, as well as that of gastritis, the author mentions a scirrhosity of the pylorus This most distressing condition of the digestive organ exists, I believe, more frequently than is generally supposed: it doubtless is the result of inflammation; but other causes than ardent spirits are capable of producing it: a scirrhous state of the pylorus has been found in individuals of great feebleness of constitution, who have at all times been guarded in the choice of food; who have lived chiefly upon plain broths and milk, and have never been addicted to the use of spirituous and malted liquors. In a paper in the first volume of the Transactions of the Literary and Philosophical Society of New York, the reader will find two cases recorded which contain some important observations as to the diagnostic symptoms of the early stage of the disease. More may be said in favour of the oxide of bismuth in dyspepsia than what Dr. Thomas has advanced.

The author very properly adverts to an obstruction of the liver, as the causes of dyspepsia, and advises for its removal the habitual use of mercury.

Cases of this nature have very frequently fallen under my care, in which, however, the affection of the liver had been entirely overlooked; indeed this error is so frequently committed by practitioners, that in my nosological arrangement I have been led to divide the disease into two species: the first proceeding from atony of the stomach, the second symptomatic of other diseases, including organic affections of the liver; the first requiring tonics and antizymics, the latter demanding a special attention to the primary disease.

From want of discrimination in this respect the grossest errors of practice are daily committed, the patient whose dyspeptic symptoms, viz. flatulence, acidity, costiveness, altogether proceed from an obstruction of the biliary organs, as in the case of the dyspepsia proceeding from debility alone, is directed to confine himself to animal food, unfermented bread, and brandy and water as his drink; the physician interdicting altogether the use of fruits, vegetables, or drinks composed of the vegetable acids, and which alone are calculated to promote the biliary discharge, and thereby to unload the diseased viscus. In like manner in cases of atony of the stomach, as in the case of hepatic obstruction, the blue pill frequently is prescribed and persisted in until the tone of that organ is entirely destroyed, instead of which a course of tonics aided by the use of animal food, together with exercise on horseback, would probably have restored the patient to health. I could recite numerous instances where the opposite modes of treatment have been successfully prescribed, altogether depending upon the cause producing the disease, and I could add others where in like manner the proximate cause being overlooked, they have been productive of the most serious results.

Anaphrodisia, or Impotency.

Dr. Thomas has, in general terms, stated the means best calculated to fulfil the indications of cure in those cases in which, from general weakness, a debility of the genital system is induced, and a consequent loss of the venereal appetite and powers is the result. Many are the causes which may be assigned for disorders of this nature: the abuse of mercury in the treatment of syphilis and of some other diseases, the unsuccessful management of gonorrhœa, the still popular and pernicious practice of using lead injections, neglected gleet, excessive venery, and particularly onanism, may be enumerated as the principal. In this condition of the physical system, the intellectual powers of the patient often largely participate; and few cases, indeed, have stronger claims on the attention of the practitioner than those in which these circumstances, arising from these causes, are united. Too frequently the representations and sufferings of the patient are regarded merely as the phantoms of the mind; and from an indifference both as to the real disease and a want of confidence in the means that may be successfully employed, the most deplorable consequences ensue.

To enumerate, in detail, the various methods had recourse to in order to renovate the constitution thus imprudently broken down, would swell this note to an inconvenient extent, and be, moreover, unnecessary, as most physicians are fully apprised of the means employed for the purpose. "The tincture of lytta," says Dr. Thomas, "might likewise be of service if given in small doses." The truth is, there is not an article of the materia medica used in any individual disease, the value of which ought to be estimated more highly than the lytta, in cases of seminal weakness and impotency when arising from the sources just stated. Though until within a few years its internal administration was pronounced to be almost uniformly productive of dangerous effects, yet it is now fully established, by numerous facts, that the instances in which it disagrees with the constitution are extremely rare, and that when, from unforeseen circumstances or peculiarity of habit, the mischief is produced, it can generally be removed by the readiest and mildest means. Occasionally, indeed, an active antiphlogistic treatment, such as blood-letting, saline cathartics, or senna and manna; the free use of diluents, as soda water, barley water, &c. and the warm bath, may be demanded. The claims of camphor in counteracting the action of the lytta do not appear to be clearly established. My own experience does not enable me to recommend it: if camphor relieves the morbid symptoms, so seldom excited by the lytta, it must, I think, do it by its anodyne or sedative properties, and not by any peculiar virtues attributed to it; and, if such be the case, I would much rather depend on the use of opium in small doses.* Most generally any uneasy or distressing symptoms from the internal use of the lytta disappear of themselves by ceasing for a while to take the medicine, and that too within twenty-four or thirty-six hours afterwards.

The lytta is not, as is generally supposed, local in its action, but produces a general excitement: it increases the sanguineous circulation, the flow of urine, and the discharges by perspiration: from its diffused action the whole system becomes invigorated, and this altered state is

* See also Orfila on Poisons.

manifested by an enlivened condition both of the mind and body. The morbid discharge from the urethra becomes altered and assumes a thick and opaque aspect, and ultimately the wonted functions of the body are restored.

The lytta has been recommended to be given in powder, in the form of pills, and in tincture. The only pharmaceutical preparation which I have employed for internal use, is the last. The tincture seems to be the most agreeable, and, in general, the most manageable form. The extent of the dose depends materially on the peculiarity of the case. Roberton observes, "It seems an invariable rule that the greater the existing debility either of the general habit or of the generative organs, the greater quantity of the lytta is requisite to effect and keep up the irritation in the urinary passages; and in such cases the cure is always more tedious. In those apparently stout, small doses, comparatively speaking, can be taken; while in those whose general health, or whose generative organs only are most morbidly affected, can take the most; and, as they approach to health the doses requisite to keep up the irritation must be diminished, the system and also the generative organs being more susceptible of its action."

Experience strengthens the preceding remarks of Mr. Roberton, to whom we are so much indebted for his valuable work on the Generative System. The dose of the preparation with which I have generally commenced, is twenty or five and twenty drops three times a day in a little wine, tinctura amara, or water. After the use of the article a few days, the dose is to be increased to thirty or forty drops, and as often repeated within the twenty four hours. It has happened at times, that on the third or fourth day, and now and then even earlier, that the patient complains of some little uneasiness in passing water: this, if it does not increase, may be, for a while, disregarded; if the pain becomes severe the remedy must be laid aside until the distress abates, after which it may again be prescribed to the same extent, if not greater, until similar effects are again induced: in this manner the use of the lytta is to be continued. A practical precept must be here enforced, *perseverance in the use of the remedy.* The extent to which it may be carried would, unaided by experience, seem incredible. Cures have been effected within a few days; at other times from peculiarity of condition, as many months or years have been required to accomplish the object in view. But such disconsolate cases as call for this prescription demand all the prescriber's skill; yet the great success which has followed this practice justifies the firmest perseverance equally on the part of the physician and the patient.

In a case (a Mr. R——, æt. 27 years,) which came under the care of Dr. Francis and myself, in the month of November 1816, the lamentable condition to which the sufferer had been previously reduced by the bad management of a neglected syphilis, and afterwards still further by an injudicious use of lead injections of an unwarrantable strength for nearly two years, led him, in a state of extreme mental anguish, to disregard the advice given him, and to seek the termination of his anxiety by self-destruction. With this view, he took nearly six ounces of the tincture of cantharides during the night. Yet no dangerous symptoms occurred: he admitted he felt a degree of warmth throughout his body to which he had been a long time a stranger, and that his mind was less depressed than before the commission of this act of folly. He nevertheless went out as usual the next morning: he after this became per-

suaded that his situation was not altogether hopeless, and that his constitution, as he said, had still some stamina left to justify hopes of a recovery. He was now induced to take the tincture of lytta in the manner and quantity prescribed: two drachms and a half three times a day united with a dessert spoonful of the tinctura amara; a generous diet was also recommended. Within about three weeks from this period he was renovated, and considered himself an altered man. His virile powers resumed their wonted energy; nor has he in the slightest degree relapsed into his former state of weakness. This is unquestionably a rare instance in which the lytta, rashly taken, and to an inordinate amount, was not followed by any serious injury. It nevertheless proves that the accounts generally given of this article exciting deleterious effects in moderate doses, are not to be received but with the greatest caution. The lytta, like the common spirit of turpentine, the effect of which was once supposed to prove fatal, even in small quantity, experience has now shown may be taken to an extent our predecessors could not have imagined. In obstinate gleets, after the ordinary vegetable and mineral tonics, the iron and gentian pills, the balsams and terebinthinates have failed, I have also given the tincture of lytta in the proportion of a drachm with a tea-spoonful or two of bitters three times a day with permanent advantage.

An error of Mr. J. Hunter ought here perhaps to be guarded against. "I think," says he, "I have been able to ascertain the fact that when balsams, turpentine, or cantharides are of service, they are almost *immediately* so; therefore, if upon trial they are not found to lessen or totally remove the gleet in five or six days, I have never continued them longer."

The beneficial effects of the use of the cantharides will occasionally speedily follow its administration; but this is an effect which in a majority of cases is the result of a continuance of the remedy for a considerable time.

The introduction of this practice in the treatment of cases of this nature, in the United States, is due, I believe, to Dr. Francis, the Professor of the Institutes and of Legal Medicine in this University.

Tetanus.

The treatment of lock-jaw by the use of *tonic remedies*, has long since been sanctioned by the successful practice of Dr. Cochran of Nevis, (see Med. Commentaries, vol. iii.) Dr. Wright of Jamaica, (see Lond. Med. Obs. and Inq. vol. vi.) Dr. Rush of Philadelphia, (see American Phil. Transactions) and Dr. Currie of Liverpool, (see Med. Mem. of London, vol. iii.) but the same treatment, in other hands, has not been equally successful, insomuch that it is still considered as one of those diseases which generally baffle medical prescription. To what causes is this failure to be ascribed? Not to any defect in the principle upon which those remedies have been prescribed: the cases which have been recorded of the success of tonic medicines, are too numerous to admit of a doubt that the proximate cause of lock-jaw consists in an exhausted state of the censorial power from violent irritation applied to the nervous system: stimulants and tonics are, therefore, the remedies which are best calculated to restore this lost energy. Their failure I have

considered to proceed from the complicated and inert manner in which they have usually been administered.

In the greater number of cases which I have either witnessed in practice, or remember to have seen described, the *bark*, *wine*, *cold bath*, and, in many instances, *opium*, *musk*, and *mercury*, have been exhibited at the same time : I must except one case, recorded by Dr. Currie in the Memoirs of the Medical Society of London, in which the patient rejecting the mixture of *bark* and *wine*, the bark was omitted, and the wine was employed alone, which ultimately effected a cure ; but in this case opium, mercury, and the cold and warm bath, had been previously employed, but to no purpose.

This complicated mode of practice cannot but be prejudicial in any disease ; in lock-jaw it must especially prove injurious, by harassing the patient, and by offending the stomach with the discordant and nauseous mixture of the remedies above-mentioned : if, therefore, a practice more simple, and at the same time, more efficacious, can be devised, it is certainly a desideratum in the treatment of this formidable and fatal disease.

Having, in a variety of diseases attended with great exhaustion of the vital powers, employed wine alone, with success, without the use of those remedies which are usually prescribed in this condition of the body, I long since resolved to give it a trial in lock-jaw.

In January 1798, a merchant of this city, while engaged in opening a box of goods, struck the inside of his right hand upon a nail ; the skin was considerably torn, but the wound did not appear to extend beneath the integuments. In twenty-four hours his hand became painful, and swelled, attended with great heat and redness, which spread over the wrist. He immediately applied a poultice of bread and milk to the part affected. In forty-eight hours the pain extended the whole length of his arm, and produced some uneasiness about his throat, especially in the act of chewing and swallowing. He became alarmed, and applied to me for advice. I found him in great pain ; but being free from fever, I directed him to have recourse to *wine* ; to take a large wine-glass full every hour until his pain was removed ; and, in addition to the use of wine, to apply a compress, wet with spirits, to the wound. When he had taken to the amount of four glasses, he felt himself very sensibly relieved ; and by the occasional use of the wine for twenty-four hours, his pains entirely left him ; the swelling subsided, and in a few days the wound healed without any unpleasant appearances.

What would have been the progress and termination of this case, had it been left to itself, is uncertain ; but the immediate good effects of the treatment prescribed encouraged me to make trial of the same remedy in a case where the disease might appear in a more formidable shape.

On Tuesday, March 13, 1798, about one o'clock P. M. I was called to visit a mulatto servant woman of John Harrington, Esq. of this city. I was informed that about an hour before, while engaged in washing clothes, she had pricked herself with a pin in the wrist of her right arm. The part at which the pin entered was upon the inside of the wrist immediately over the connexion of the radius with the carpus.

The pin was instantly removed, and finding no inconvenience from the accident, she returned to her employment. In a short time she felt a great degree of soreness in the part which had been injured, with pain shooting occasionally to the arm, shoulder, and neck. These

symptoms, in a few minutes, were succeeded by stiffness about the throat, difficulty of swallowing, some interruption of her speech, and, at length a locked state of the jaws, attended with a spasmodic contraction of the muscles at the back part of the neck, and occasional subsultus tendinum, with some coldness of her extremities. In this situation I found her.

She was naturally of a delicate and irritable habit of body, and had been much subject to hysterical complaints and fits of fainting, which were sometimes induced by the most trifling causes. Her irritability of habit was also at this time probably increased, having but three months before borne a child, which she was then suckling.

Although I have been long since convinced of the insufficiency of opium in the cure of this disease, in the hurry of the moment I gave her about sixty drops of laudanum, in a small quantity of wine Her jaws being closely locked, it was with great difficulty administered. In a few minutes after swallowing the laudanum, she sickened at the stomach, and vomited violently, complaining at the same time of great pain and distress at the pit of her stomach. The anodyne draught was entirely rejected; but, upon a moment's reflection, I did not regret this circumstance, as the disease assumed a very decided character, and I had made up my mind to rely upon the effects of wine alone, without the assistance of any other remedy: accordingly, about two o'clock, I directed a large wine-glass full of *Madeira wine* (the glass containing about two ounces) to be given punctually every hour, and a cup of sago, or panada, with wine, to be given from time to time, as her nourishment At this time another physician, who had also been called upon at the time of the accident, arrived. I related to him what had been done, and the mode of treatment which I directed for the patient. This gentleman having had frequent opportunities of seeing this disease, and having frequently witnessed the failure of the ordinary mode of treatment, he at once, with great candour, acceded to the plan proposed, and, in addition to the use of wine, proposed the application of caustic to the part which had been wounded. Accordingly the wound was freely pencilled with the lunar caustic, and afterwards covered with a poultice of bread and milk, with the view to obtain suppuration as soon as possible.

The wine was administered with great fidelity by the mother of the patient, until about five o'clock the next morning. She had some slight convulsions in the course of the afternoon, but they were more of an hysterical sort, induced by her great anxiety of mind, than to be ascribed to the disease itself. Generally speaking, there had been a very manifest abatement in all her symptoms, and she had passed a more comfortable night than could have been expected. At five o'clock on Wednesday morning, her mistress, alarmed at the quantity of wine she had taken, desisted from its further use. From this time appearances became more unfavourable, and at eight o'clock her jaws, which had been relaxed during the plentiful use of wine, again became stiff and closed. We saw her at nine, and immediately gave her about half a pint of wine, and ordered it to be administered as before. At one, her symptoms were greatly changed; we found her sitting up in bed, eating small portions of roasted oysters, which she had called for. At this time her jaws were almost in their natural state. She had taken her wine punctually as directed, but experienced no inconvenience from it whatever, although in health she had not been accustomed to its use. Her pulses

were still small and feeble, without any excitement from the use of wine. The heat of body remained at its natural standard, but not at all increased. The pain in her hand was abated, but without any appearance of suppuration. Finding this mode of treatment to agree so well with her, we directed it to be continued. We saw her again in the evening; her symptoms still continued favourable, without the smallest febrile action from the use of wine. Having had no discharge from her bowels since her illness an injection was administered; which remedy was afterwards employed from time to time in the course of her disease, whenever the state of her bowels required it The wine was continued through the night: she slept altogether about three hours in the course of the night, and took freely of her panada.

Thursday morning at nine o'clock her complaints appeared to be in a great measure subdued, insomuch that we did not think it necessary to visit her again until late in the evening, and directed the wine to be given at longer intervals, and the quantity to be lessened.

She remained in a very comfortable condition until the afternoon—the *pain in her hand returned* with violence, extending to her arm and neck as before—her jaws were again closed—the rigidity of the muscles at the back of her neck returned—her mind became greatly agitated—she again complained of distress at the pit of her stomach—she fainted, and had several slight convulsions. Being called at that time, I gave her with some difficulty, about half a pint of wine, and ordered a warm poultice to be immediately boiled. When prepared, I poured upon the surface of it half an ounce of laudanum, and applied it to the wound. Her symptoms were in a short time allayed. I left her, directing the wine to be continued as before, a large wine-glassful every hour.

We saw her again at nine in the evening. She remained tranquil—her jaws were less firmly closed, but the pain in her hand was not altogether removed. Although she had taken the wine punctually as directed, it had not produced the least apparent excitement. Having had no discharge from her bowels for the last twenty-four hours, an injection was administered. The anodyne poultice was renewed; and, in addition to this application, we directed her arm to be bathed with laudanum occasionally through the night.

Friday morning we found she had passed a more comfortable night than the last; had taken her wine every hour; her jaws were perfectly relaxed; the pain in her hand had greatly abated; and she was enabled to extend her fingers at pleasure, which she could not do before. Her pulses and skin were natural; her appetite unimpaired; her mind composed, without any inconvenience from the wine. We directed her remedies to be all continued as before, fearing lest any alteration might subject her to a return of her complaints.

In the evening we observed the wine had exhilarated her spirits; she became very talkative; her pulses became full, and free from all tension; her skin was somewhat heated, and all complaints removed except the wound at the wrist, which exhibited a healthy appearance, and was entirely free from pain, but without any sign of suppuration.

We directed the wine to be administered through the night, but in smaller quantities and at longer intervals, unless her complaints should return, and demand a continuance of it as before.

Saturday morning we were informed she had slept the greater part of the night, and had taken but a small quantity of wine: her symptoms

being, in all respects, favourable, the wine was discontinued, except a small quantity mixed with nourishment. A dressing of simple ointment was applied to the wound. From that time she remained free from any return of her complaints, and has since been in perfect health.

Upon calculating the quantity of wine which she had taken, it amounted to three gallons. *Med. Repos. for* 1799.

Since the publication of the foregoing case three other instances have fallen under the care of other practitioners, in which the salutary operation of wine has been observed in subduing this disease. Not long since a merchant of this city in the act of opening a case of goods lacerated the palm of his right hand—very soon after the irritation extended along the inside of the fore-arm and arm, involved the nerves of the neck, and produced considerable stiffness of the jaw ; but by the use of a poultice of bread and milk to the hand, and the administration of an anodyne, with the free use of wine, the irritation was in a short time totally subdued. I was also informed by the late Dr. Wistar, that in a case exhibiting the symptoms of lock-jaw succeeding to an amputation, he had, by the use of wine totally removed them. A fact related to me by the late General Moreau, that lock-jaw is of rare occurrence in an army when they first take the field, and that it is readily produced by the slightest wounds, when the soldiers have become debilitated by fatigue, long marches, and frequent battles, shows the influence of a tonic state of the nervous system, in counteracting morbid impressions, and is certainly favourable to an analagous artificial excitement for the removal of those impressions constituting Tetanus.

Tic Douloureux, or Neuralgia.

This disease seems to be nearly allied to rheumatism, but is considered by most physicians as idiopathic. Professor Chaussier has very correctly denominated it *Neuralgia*. As a distinct disease affecting the nervous system, it attracted the attention of physicians at a period much earlier than is generally supposed. It was noticed as such by Dr. Daniel Ludwig in 1673 ;* by John Hartmann Degener, a practitioner at Nimeguen, in 1724 ;† by Andree, a French surgeon, in 1756 ;‡ and by Dr. John Fothergill of London, in 1776 :§ by the latter it is described under the appellation of a *painful affection of the face.*

By most physicians who have written upon this disease, and even by systematic writers, it has been generally considered as seated in the second branch of the fifth pair of nerves, or in the portio dura of the seventh.

Mr. Abernethy, however,‖ has related a case which was seated in the nerves of the ring finger of the left hand. Mr. Home, in his Croonian lecture,¶ has also related some instances of this disease, the effect of an

* Miscel. Nat. Cur. Dec. 1, Ann 111 Observ. 252, " de dolore superciliari acerbissimo."

† Acta Natur. Curios. " de dolore quodam perraro acerboque maxillæ sinistræ partes occupante et per paroxysmos recurrente." Vol. 1. p. 347.

‡ Observations Pratiques sur les Maladies de Lurethre et sur les plusieurs faits convulsifs. A Paris, 1756, p. 318, &c.

§ Med. Obs. and Inq. vol. 5th.

‖ Surg. Observ. vol. 1. p. 244.

¶ Phil. Trans. for 1801.

injury to the thumb. In the Edinburgh Medical and Surgical Journal, a case is recorded by Dr. Verpinet as occurring in one of the nerves of the fore-arm, the consequence of a wound from a knife.

The first case of this disease which fell under my notice was that of the late Mr. Charles Apthorpe, of New-York, in 1794. The disease was seated in the lower as well as the upper jaw, and occasionally as in the case of Mr. Bosworth, related by Mr. Leigh Thomas,* embraced all the three branches of the fifth pair of nerves. Previously to this affection of the face and head, Mr. Apthorpe had suffered many years from regular gout. In this case the neuralgic affection was probably induced by the same cause, as the gout was totally suspended upon the appearance of the latter disease. Mr. Apthorpe had then passed the 60th year of his age. In three other cases the disease occurred in females between thirty and forty years of age; in all three the nervous temperament was strongly marked, and predisposed them to the complaint; in one the ophthalmic branch of the fifth pair of nerves was exclusively the seat of the disease, each paroxysm being attended with violent action of the muscles of the eye, a compression of that organ, and a copious discharge of tears: this lady for several years previous to this affection, had suffered repeated attacks of acute rheumatism, which never recurred after the appearance of her new complaint In the second, the nerves extending over the side of the head as in hemicrania, were the seat of the disease. In the third it commenced in the fifth pair, but soon involved the whole nervous system, producing convulsions, to subdue which, required the most liberal use of opium and æther. In all of these cases the patients suffered repeated returns of the disease, especially in the fall, winter, and spring; but by the use of tonic medicines, exercise, the cold bath, and attention to diet and mode of life, at the same time avoiding exposure to the changes of the weather, they have for some years past escaped the usual visitations of this distressing malady. Another lady, far advanced in life, in consequence of an injury of the extremity of the fore-finger of the right hand, has endured for several years the most severe paroxysms of this complaint, not only affecting the branch of the injured nerve, but those distributed upon the fore-arm and occasionally extending to those of the neck. In August 1813, I was called upon to visit Mrs. S. aged about 52; she was confined to her room by an attack of neuralgia seated in the fourth toe of the left foot. She was first affected with this disease about three years before; but knows no cause to which she can ascribe it. She has made use of blood-letting, opium, warm bathing, and fomentations, without effect; and upon one occasion the pain was so acute that she plunged the part affected in boiling water, but without relief.—I directed the toe to be involved in a blister, which was continued to the part twenty-four hours, but this, like the other means that had been resorted to, was of no avail. As there is a manifest resemblance between the severe pain frequently suffered in acute rheumatism and that of neuralgia, it occurred that benefit might be obtained by the use of the volatile tincture of guaiac; a tea-spoonful of this medicine was accordingly directed to be taken every two hours in half a glass of wine. After taking a few doses, the patient experienced more relief than from any other medicine she had taken.—

* The very interesting case of Mr. Bosworth the reader will find recorded by Dr. Darwin, in which all the three branches of the fifth pair and the several branches of the auditory nerve were successively divided before the patient obtained relief. See Zoonomia, 3d edit. Lond. vol. 3, p. 218.

Since that time, whenever she has the least irritation in the affected part, she has immediate recourse to the tincture, and uniformly with relief.

From these facts it also appears that neuralgia is not confined to the nerves of the face, as most physicians have supposed; but that it is frequently connected with the general condition of the nervous system, and that we are not in all instances to rely upon the division of the nerve affected for the cure, but to direct our remedies according to the temperament of the patient, the peculiar condition of body and vice of the habit from whence the disease may have originated. Dr. J. Fothergill in some instances traced it to a cancerous or vitiated habit of body, and in three cases has removed the disease by the use of hemlock: some French physicians have cured it by mercury,* believing that in some cases it may have arisen from a syphilitic taint; others, treating it as rheumatism, have employed calomel and opium with success.† As the complaint for the most part occurs late in life, and in females most generally after the natural cessation of the menses, or, if in early life, from the suppression of the evacuation, may it not also derive its origin from the state of the blood-vessels, an arthritic habit, or that condition of body which induces rheumatism,‡ especially in persons of the nervous temperament, who are generally the subjects of neuralgia? In cases of this nature, the lancet, warm bathing, alterative drinks, and the vol. tinct. guaiac., with other means calculated to operate upon the whole system, may, according to the peculiar circumstances of the case, take the place of the knife, now resorted to for the division of the nerve affected, and which, in some instances, disappoints both the patient and practitioner.—Dr. Jackson of Boston, has published an excellent paper on neuralgia in the New England Journal of Medicine and Surgery, vol. 2, p. 165.

Epilepsy.

In a majority of cases of this disease which have fallen under my care I have found the use of the lancet attended with advantage, particularly in those instances where general plethora existed. Much too may be done by an antiphlogistic diet, and in few disorders it is expedient to be more guarded in the avoidance of animal food, and the more stimulant articles of diet. When tonics are indicated, I have placed a greater dependence upon the use of chalybeates and the argentum nitratum, than upon any other remedies.

Sternalgia, or Angina Pectoris.

Of the various theories which have been maintained as to the nature and cause of angina pectoris, Dr, Parry's seems still to continue the most popular. Many circumstances, however, might be stated, which

* Recueil periodique de Medicine, Paris, 1702, tom. iv. See also Edin. Med. and Surg. Journal, vol. 3, p. 273.

† Edin. Med. and Surg. Journ. vol. 4, p. 306.

‡ See two cases thus induced related by Dr. Pearson, do. vol. 3. p. 272.

completely overthrow his opinion; some of these are noticed by Dr. Thomas. From all I have observed of angina pectoris, I am induced to believe that it proceeds *from a plethora of the blood vessels, more especially from a disproportionate accumulation in the heart and larger vessels.* The large accumulations of fat, the effusion of water in the thorax and pericardium, the distended state of the vessels, and even the earthy deposites occasionally met with in the valves and vessels of the heart, may be considered the effects of such plethora. In further confirmation of this view, almost every writer on this disease has observed, that the persons most liable to angina pectoris are those of advanced life, of corpulent and gouty habits, with short necks. The season at which the first attack comes on, though not recorded with the same particularity, when noticed, has most generally been in the winter and spring of the year. Hæmorrhages or spontaneous discharges of blood from different parts of the body, anxious and oppressive breathing, numbness of the extremities, and giddiness, have been observed in persons subject to this complaint, and are all evidences of an overloaded state of the blood vessels. Some cases recently related by Dr. Latham,* and ascribed by him to an obstruction and enlargement of some of the abdominal viscera, as the liver, are also favourable to this view of the subject as connected with a general fulness of the system, and that this disease is not ascribable to the local causes to which it is ordinarily attributed. The treatment of angina pectoris which has proved to be most successful, the beneficial effects which have been derived from the use of issues and other evacuations, leave no doubt of the connexion of this disease with plethora.

The remedies which may be prescribed with most advantage are those which are calculated to diminish the fulness of the system: for this purpose recourse must be had to repeated and copious blood-letting, active cathartics, as jalap, calomel, gamboge, and other evacuants; and for the removal of the spasm, palpitation of the heart, and coldness of the extremeties, æther, volatile alkali, the compound spirits of lavender, and other diffusible stimuli are to be exhibited. Opiates, by lessening and occasionally suspending the spasm, are also used with advantage, especially after blood-letting has been freely employed. Warm bathing and friction of the extremities are also useful by promoting the circulation in the extremities and a determination to the surface of the body, and thereby proportionably diminishing the fulness of the heart and larger vessels. Diet and regimen will materially aid us in preventing the returns of the disease. The diet of the patient should be plain, easy of digestion, and composed of a due proportion of animal and vegetable food: but the use of wine, ardent spirits, and especially malt liquors, and the usual condiments of the table should be carefully avoided or very sparingly taken: late suppers should be altogether prohibited. Regular and daily exercise, flannel worn next the skin and frequently renewed, by their effects in promoting the excretions, no less contribute to counteract the plethora to be guarded against.

I might further remark on this alarming and formidable disease.† The views I have thus briefly offered of its nature, are the result of pathological investigation, and the utility of the treatment now recommended has been confirmed by the successful issue of many cases which have come within my own practice. The reader will find this subject ably

* See Med. Trans. of College of Phys. of London, vol. 5.

† See additional observations on the subject in the Editor's Essays vol. 2. p. 288.

treated in Dr. Bogart's Inaugural Dissertation, and in the elaborate and practical volume of Dr. Dyckman on the Pathology of the Human Fluids. See also Med. and Phil. Register, vols. 2d. and 4th.

Dropsies.

Of the disorders arising from a general plethora of the system, the various species of dropsy may be mentioned. Experience has long since taught me that morbid accumulations of watery or serous fluids arise as often, nay, more frequently, from increased exhalation, the effect of an overloaded state of the blood-vessels, than from diminished absorption occasioned from a loss of tone in the absorbent vessels, and consequently that dropsy may, and frequently does, proceed from the want of blood-letting, as well as from the excessive use of that evacuation. I have seldom, if ever, attended a case of hydrothorax that did not arise from increased exhalation; the same may be said of hydrocephalus, which is almost always, I consider, preceded by, or accompanied with, inflammation of the brain.

Did the limits to which these notes are restricted permit, it were easy to relate many instances of *hydrothorax*, *ascites*, and *anasarca*, produced by such fulness of the vessels, relieved by blood-letting, calomel, and squills, and other depleting remedies; and the powers of the system again restored by chalybeates and other tonics. Digitalis, so generally and so freely administered in dropsies, can only be serviceable when the disorder is in its forming state. In the secondary stage of the disease, when symptoms of fulness or preternatural excitement do not exist, this active narcotic cannot fail to do harm.

Hydrocephalus, in its acute form, is an affection of frequent occurrence in this city: in three cases for which I not long since prescribed, a cure was effected by blood-letting, active cathartics, and blisters, all which were made use of during the inflammatory stage of the disease, before the symptoms of effusion had taken place in their greatest extent. In those cases mercury was not administered except as a cathartic in combination with large doses of jalap. This fact reminds us of the remark of Dr. Rush, that in consequence of his unsuccessful use of mercury in dropsy of the brain, he has declined the use of that medicine altogether in this disease, except when combined with some purging medicine, and that he administers it in this form, chiefly with a view of dislodging worms. Query. Does not mercury, by the excitement it produces, add to the inflammation which characterizes the first stage of hydrocephalus?—Mercury, in my opinion, has oftentimes been the exclusive cause of this disease.

Certain it is, that dropsy of the brain has become of much more frequent occurrence since the general, and I had almost said the indiscriminate use, of this metal in febrile and inflammatory diseases.

In the fourth volume of the Medical Histories and Reflections, the author, Dr Ferriar, appears to have been solicitous to find a more certain *hydragogue* than any of those now in use; and from the successful results of his own ample experience he recommends an extract of the *elaterium* as surpassing every other medicine in the power of removing serous accumulations, and as affording astonishing relief in the dyspnœa arising from hydrothorax and ascites. Pliny, as stated by Dr. Ferriar,

though he was not acquainted with the power of the elaterium in dropsical complaints, considered it highly valuable, "ad magnos mortalium usus." Dr. Ferriar has briefly related the particulars in twenty cases in which the elaterium was prescribed with various success. Upon its first exhibition to a patient it is nearly as active and as dangerous, if incautiously given, as arsenic.

"The sensible effects of the elaterium are, severe and constant nausea, frequent watery stools, and, in considerable doses, vomiting. It does not uniformly increase the urine, and for this reason it is generally proper to combine it with more certain diuretics. After continuing the use of the medicine for some days, the patient will sometimes bear a considerable increase of the dose. I have gone to the extent of five or six grains a day in this manner, without producing any inconvenience. But it is always proper to begin with the lowest dose, which is the sixteenth part of a grain of the extract."

Since the last edition of this appendix, I have frequently had recourse to the elaterium both in hospital and private practice. My experience coincides with that of Dr. Ferriar: the elaterium is a powerful, and in every instance in which I have used it, a certain hydragogue. I have begun with the eighth of a grain four times a day, and given it to the extent of two grains three times a day. It produces copious liquid evacuations from the bowels, under circumstances of great torpidity of the intestinal canal, when other powerful means have failed, and at times causes an additional increase in the urinary discharge. This latter effect, however, as remarked by Dr. Ferriar, is very uncertain. I have deemed it most expedient, notwithstanding its vigorous action, to unite the pulv. extr. elat. with small doses of cream of tartar, in preference to either calomel or squills. It does not appear to add to the debility of the system, as some other remedies employed to fulfil the indications answered by the elaterium.

Doctor Yeates of London, in his letter to Dr. Wall, has lately published some highly interesting observations on dropsy of the brain. In his Dissertation on the Pathology of the fluids, Dr. Dyckman has also treated, at some length, of dropsies arising from plethora of the vessels.

Bronchocele.

In the observations of the author upon this disorder, he has judiciously noticed the most recent remedies that have been proposed or tried for its removal. As bronchocele, however, is a complaint which presents itself to the attention of American practitioners in different districts of our country, and has heretofore been found among the most obstinate in its cure, I am induced to add a few remarks on the subject.

European writers do not appear to be generally aware of the existence of this disease in the American states, though I am inclined to believe that the number who suffer from it is not so great as some of our native writers have affirmed.

Vermont, New York, and Pennsylvania have been particularly noted as presenting many instances of this peculiar affection: I have little doubt that the cases will become less frequent with the improved condition and settlement of our country.

The disorder certainly is not so common in the state of New York as formerly: I have repeatedly prescribed for cases of the complaint in patients who have come from the distant parts of Pennsylvania and New York; and during the summer of 1823, my friend and colleague in this university, Professor Francis, enjoyed an opportunity of witnessing bronchocele in the western section of this State. I avail myself of some of the more prominent circumstances which he observed while on this tour, and has kindly communicated to me.

"However frequent cases of goitre may formerly have been in the state of New York," says Dr. Francis, "the fact is certain, that they are much less common at the present time. Even the representations of the late Dr. Dwight, (*Travels*, vol. iv.) on the great prevalence of the disease, though among the most recent with which we have been favoured, are to be received with due allowance. That in particular portions of our western country, repeated examples are to be found, may be known by any accurate observer. Nevertheless, in the village of Utica, which contains between four and five thousand inhabitants, not a case of bronchocele could be pointed out, and this village, you know, occupies the site of old Fort Schuyler, on the Mohawk, the vicinity of which place so many writers have referred to as the especial spot for the prevalence of the complaint. I am strengthened in the accuracy of this statement, concerning the perhaps total disappearance of goitre at this locality, by the testimony of Dr. Coventry. A similar remark may be made with regard to the former frequency of the disease throughout the extensive region from Utica to Buffalo. In his excursion through this country some years since, as we are informed by Dr. Dwight, the late Uriah Tracy was led to believe that bronchocele prevailed, though probably not in every township, yet in the old settlements as well as in the new, and that it was incidental to the country at large. I made special inquiry as to the verity of these facts, in the present condition of the health of the inhabitants of this tract of country, and am persuaded that the instances of goitre are of much rarer occurrence now than at the period of Mr. Tracy's visit.

"The number of cases which came within my notice during the tour, amounted to twenty-three. These were found principally at Herkimer, Manlius, Syracuse, Onondaga, Batavia, Williamsville, and Buffalo. I saw more instances of the disease at and about Buffalo than at any one other place. We know that in other parts of the state the complaint may also have been seen, as in the county of Alleghany.

"Professional ability has been taxed in vain to assign a satisfactory cause for this disease. I do not feel myself warranted, from my limited observation, to offer any positive opinion on the subject. Dr. Barton has endeavoured to show that goitre, intermittent and remittent fevers, have one common origin; and among his arguments in support of this position, he states the frequent appearance of glandular affections in countries in which intermittent fevers exist; the prevalence of such fevers where goitre is found, and from information which he received, that in the state of New York, those persons who are affected with goitre are commonly exempt from intermittents, though in the midst of regions suffering from these disorders. Dr. Coventry seems to conclude that it has its origin from drinking water impregnated with alum. Dr. Dwight contends for the once current opinion that bronchocele arises from the water impregnated with calcareous matter. These views I have selected from American sources, because they have been main-

tained by writers, all of whom have observed the complaint as it occurs in the state of New York. Neither of them appears to me to rest upon sufficient foundation. From the best information I could obtain, I should rather conclude, that bronchocele is intimately connected with humidity, and the disease is best known where the atmosphere is moist, in the vicinity of rivers and lakes, and where vegetation abounds: it would seem to increase with the rains of spring and autumn, and to diminish if the season be cold and dry. Hence we may advert to the truth of the doctrine, that the disorder disappears as a country becomes cleared and better cultivated. Notwithstanding these views I should reluctantly reject the agency of certain waters, taken inwardly, in the production of this disease.

"Of the twenty-three cases which I saw, two only were male subjects; one of whom was an adult Indian in Niagara county. Though apparently a local affection, it in some instances might be deemed to depend upon constitutional peculiarity. We have good authority to consider the disorder occasionally hereditary; and I have met with it in an infant of a few months of age. Mr. Wright, the engineer, a most intelligent man, informs me that bronchocele is found to prevail in Oneida county among sheep; and Fodere gives us a similar fact of its occurrence among dogs. The sexual functions are perhaps sufficient to account for the greater prevalence of the disorder among women than men; and well acknowledged facts, connected with parturition, corroborate the doctrines of Hunter and others on this point.

"The various methods of relief or of cure for the disorder, are such generally as are adopted abroad. I was informed that mercurials and stimulating plasters had been used. Dr. Coventry has removed several cases of the complaint by the patient wearing the muriate of soda round the neck. The recent plan of Mr. Holbrook of England, of employing steady pressure has also been tried. The efficacy of burnt sponge has often been evinced, and cases of its failure are not unfrequent. Instances of the removal of the complaint by change of residence have become familiar to the knowledge of many practitioners. At my suggestion, Dr. Congdon of Buffalo, has lately tried iodine in several cases of bronchocele, and, as he informs me, with entire success.

"Some few years ago, a formidable case of bronchocele in Ontario county was cured by the extirpation of the tumour by the knife."

To the preceding communication I am induced to add some further particulars concerning bronchocele, recently published by Captain Franklin of the Royal Navy, in his journal of his expedition to the Polar Sea. The intelligent Dr. Richardson, attached to the same mission, has stated the following facts:

"Bronchocele, or goitre, is a common disorder at Edmonston. I examined several of the individuals afflicted with it, and endeavoured to obtain every information on the subject from the most authentic sources.

"The following facts may be depended upon: The disorder attacks those only who drink from the *water* of the *river*. It is indeed in its worst state, confined almost entirely to the half-breed women and children, who reside constantly at the fort, and make use of river water, drawn, in winter, through a hole made in the ice. The men, from being often from home on journies through the plain, when their drink is *melted snow*, are less affected; and if any of them exhibit, during the winter, some incipient symptoms of the complaint, the annual summer voyage to the sea-coast generally effects a cure. The natives, who

confine themselves to *snow water* in the winter, and drink of the small rivulets which flow through the plains in the summer, are exempt from the attacks of this disease. A residence of a single year at Edmonston, is sufficient to render a family bronchocelous. Many of the goitres, acquire great size. Burnt sponge has been tried and found to remove the disease; but an exposure to the same cause immediately produces it."

"A great proportion of the children of women, who have goitres, are born idiots, with large heads, and the other distinguishing marks of cretins. I could not learn, whether it was necessary that both parents should have goitres to produce cretin children.*

The late remedy iodine, which has been introduced by Dr. Coindet of Geneva, seems to promise all that can be desired as a successful agent in the treatment of a majority of the cases of goitre; and the late work of Dr. Manson of Nottingham, shows that it possesses great powers in the cure of many obstinate diseases, over which other remedies have little or no influence; as physician to the general Hospital at Nottingham in England, he has prescribed the iodine in bronchocele, paralysis, chorea, scrofula, white swellings, distortions of the spine, &c. The following is an abstract of his cases of bronchocele.

He prescribed the iodine in 115 cases of this disorder as follows:—

Males, cured,	10	*Females*, cured,	66
relieved,	1	relieved,	9
discharged for non-attendance,	1	discharged without relief,	2
improving under treatment	3	discharged for non-attendance,	9
	15	improving under treatment,	14
Total 115.			women 100

The medium doses of iodine, in these cases, was from x to xxvj drops three times a day. Dr. Manson prescribes aperients of

Pilul. Cambogiæ, 6 gr.
Pil. aloes, 6

Mistur. purgantis, &c. &c. for a day† or two at first, and after h. s. pro re nata.

Dr. Manson has advanced some observations on the pharmaceutical preparation of iodine which ought to be observed. "I was compelled to use a tincture of a different strength from that of the ingenious physician of Geneva, as the rectified spirit of the hospital would not dissolve the iodine in the proportion which he employs, and I found double the quantity of rectified spirit added in portions, and assisted by trituration, only sufficient to dissolve and keep permanently suspended the quantity of iodine he has directed. This tincture I have employed for the last three years, and I have never found any deposition of iodine, or change in the sensible qualities of the tincture to take place, an occurrence which is reported to have happened to the tincture employed by Dr. Coindet, and others, who have imitated him."

The following is his formula for the tincture of iodine:

Tinctura iodini,
℞ iodini ʒj.
Sps. rectificati ℥ iiſs solve, terendo in vase vitrio.

* Franklin's narrative of a journey to the shore of the Polar Sea, p. 118. and 119.
† See Medical researches on the effects of iodine, by Alex'r. Manson, M. D. &c.

Venereal Disease.

Notwithstanding all our author has so ingeniously said to the contrary, it is deemed unnecessary here to attempt to show that gonorrhœa, or urethritis, as I have denominated it, and lues venerea, are diseases of a different nature, that each originates from different causes, and that the modes of treatment each requires is different.

In the treatment of gonorrhœa regard must ever be had to the stage of the disorder. The usual prescription, especially among young practitioners, is lead water: many years since I became acquainted with the pernicious consequences of that injection. Indeed in every case of gleet following gonorrhœa, for which I have ever been consulted, the disease has been, without a single exception, traced to the debilitating sedative effects of that metal. Most cases too of the inflamed testis which I have seen attendant upon gonorrhœa, have been produced by the same cause, viz. the too early and sudden check of the secretions of the urethra by the use of lead injections. In gonorrhœa, as in inflammation of the eyes, the treatment of the first stage consists chiefly in abstinence from stimulant drinks and animal food; the free use of barley water, lemonade and other diluents, mild cathartics, and other evacuants where they are indicated, bathing the part affected with warm water, or the use of the warm bath; and after the pain, ardor urinæ, and other symptoms of inflammation have somewhat subsided, the use of an injection of a solution of the sulphate of zinc, from two to four grains, in proportion to the sensibility of the parts affected, to an ounce of rain water, employed six or eight times a day until the purulent discharge has totally disappeared. In like manner in the treatment of an *inflamed testis*, which I may remark I have never seen produced by the *vitriolic* injection, as stated by Dr. Thomas, instead of cold saturnine applications, I have for many years past prescribed, in addition to the usual antiphlogistic means, tepid fomentations of vinegar and water with the most beneficial consequences. Were not the remarks in some degree misplaced, I might here consider the treatment frequently adopted with regard to inflammation when affecting other parts, as inflammation of the eyes, &c. In the *inflammation of the capsular ligaments*, the effect of strains, the practice just stated may be safely recommended, until the pain, tumour, and inflammation are removed. When debility alone remains, and the parts are free from irritation, cold applications of vinegar, water, or spirituous liniments may then be advantageously prescribed; but with many practitioners a different practice prevails. Instead of warm, cold applications are directed from the very commencement of the injury, and which rarely fail to stiffen the joint, to increase the pain, and ultimately to add to, instead of diminishing the inflammation. Mercury is wholly unnecessary in the treatment of gonorrhœa.

In the constitutional disease called *syphilis*, as a general rule I have found the internal preferable to the external use of mercury, and the mercurial salt, which from experience I recommend as combining most advantages, and as agreeing best with the greatest number of cases, is the corrosive sublimate or oxymuriate of mercury. This salt either in the form of pill or solution I have uniformly employed with success for the cure of syphilis, not only when the disease may have been recently contracted, but in the most malignant form which it assumes when it has

been neglected or injudiciously managed. A valuable auxiliary will also be found in the decoction of the lignum guaiaci and the radix sarsaparillæ, as powerful alteratives. Here I cannot but protest against the salivating system by friction with *mercurial ointment*, and the use of calomel, so commonly had recourse to. It is true that those forms of exhibiting mercury very soon affect the gums, but it is no less true, that when mercury exerts its influence upon the salivary glands in proportion as this influence is manifested, it ceases to operate upon the other excretions of the system, and consequently is less active in eliminating from the body the poison of the disease. Salivation, it is now well ascertained, is wholly unnecessary in the treatment of syphilis, and the knowledge of this truth cannot be too extensively circulated in a country where, notwithstanding the present respectable state of its medical science, many of the most pernicious errors of some of the older practitioners are still sedulously inculcated.

As the introduction of the corrosive sublimate is calculated to remove many absurdities in the present practice of treating syphilitic disorders in this country, I am induced to make a quotation of some extent from an Essay on this subject inserted in the Amer. Med. and Phil. Register. I am aware that in certain of the public hospitals of Great Britain, as well as of the United States, the corrosive sublimate is rigidly proscribed as inefficient for the cure both of the primary and secondary stages of lues venerea; but it deserves to be recollected, that this form of mercury still retains, throughout the European continent, the high celebrity it acquired long since as an anti-venereal. In the Venereal hospital at Paris, the largest and one of the best conducted establishments of Europe, the corrosive sublimate is the only form of mercury employed; and Professor Cullelier, after the most ample experience at this charity, knows not an instance of failure with this remedy, or one in which it has produced injurious effects. In the Essay just alluded to, after having considered the modus operandi of mercury upon the human constitution, and the abuse of this medicine as an article of the Materia Medica, Dr. Francis observes:

"Among the principle advantages which the corrosive sublimate (the oxymuriate of mercury,) possesses over that of every other preparation of mercury are, that, judiciously administered, it is particularly mild and safe in its operation, will admit of a more extensive use in all the various forms of lues venerea, and subject the patient to fewer inconveniences: that it readily enters into the general circulation, becomes miscible with the several fluids of the body, the soonest arrests the progress of the complaint, and eliminates the morbid matter through those emunctories best calculated for that purpose: that it supersedes the necessity of salivation, by its action on all the secretions, and by promoting especially the cuticular discharges, and the evacuations from the kidneys: that it is the only preparation to be depended on in those peculiar habits of body so susceptible to become salivated by every other form of mercury now in use; that in its ultimate effects upon the constitution, it is attended with comparatively no injury. These facts are indeed truly important, and many of them are granted by those who altogether reject the use of this preparation.

"It is not a little unfortunate for the advocates of other combinations of mercury, that the objections which have been brought against the corrosive sublimate are so dissimilar. It has been assigned as a reason against the preparation itself, that it has failed of its salutary effects by

being given in too small doses. By some its anti-venereal properties are said to be lost on account of its too readily exciting the cuticular discharge ; by others it is owing to its defective action on the secretions of the skin and mouth. By some it is admitted to be beneficial in the primary stage of the disease, and by others it is contended that it is calculated to remove only secondary symptoms. It is also declared that it is violent and uncertain in its operation, and that it does not render the cure permanent.* Some of these objections are, indeed, weighty, and, were they well founded, would fully justify the abandonment of this peculiar combination of mercury ; but if the least reliance is to be placed upon the experience and observation of those who have employed the corrosive sublimate with the most disinterested and honourable views, and solely to determine upon its anti-venereal powers, evidence sufficient to prove the fallacy of these objections, and derived from indubitable sources, might be adduced. The testimony of Dr. Locher, of the Vienna hospital, is so full and explicit, that it were an omission not to insert it. Having witnessed the horrid calamities, arising from salivation and other abuses which existed in that institution in the management of venereal patients, upon the recommendation of Van Swieten, he made trial of the corrosive sublimate. From the year 1754 to 1762, he cured by it no less than four thousand eight hundred and eighty persons, *without inducing salivation ;* and testifies, that 'no persons died, or experienced the least painful and dangerous symptoms, in consequence of this remedy.'† In the cases in which the same preparation was recommended by Pringle,‡ the cures that were effected were permanent, and from the repeated experience of many other distinguished practitioners, the same result ensued. Multa nobis exempla visa sint luis venereæ, mercurio sublimato corrosivo perfectè sanatæ.§

"To enter into a consideration of the treatment of the various symptoms which characterize lues venera in its simple and in its more confirmed state, is not deemed necessary, nor will it here be attempted. Fully convinced, as the writer is, of the decided advantage which the corrosive sublimate, as an anti-venereal remedy possesses, in most cases, over other mercurial preparations, he cannot forbear adding a few further observations for the purpose of recommending to more general use this combination of mercury.

"A very forcible reason why a preference ought to be given to the corrosive sublimate as an anti-venereal remedy, is the mildness of its operation when compared with most other mercurial preparations. In the mind of the judicious practitioner there need exist no apprehensions of the severity of its action ; few articles of the materia medica can be more readily accommodated to the peculiar condition of the patient and the nature and stage of the disease. The evidence of its mildness may be adduced from the salutary effects which it produces in the constitutions of delicate children, and even of infants. In not a single instance within the recollection of Dr. Hosack, has it ever been followed by pernicious consequences, though long employed by him in many cases in which the patient laboured under some hereditary taint, obstinate cuta-

* Hunter, Howard, Pearson, Mathias, and others.

† Locoer's Observat. Pract. as quoted by Van Swieten, Commentaries, vol. 17. p. 294.

‡ Gorden, Lond. Med. Obs. and Inq. vol. 1. p. 365. vol. 2. p. 73.

§ Ratio Medendi, pars secunda, p. 229. See also Medica Clinica, by Christian Gottlieb Selle, Berlin, 1802.

neous eruption, or other symptoms indicating an alterative course of remedies. The destructive effects which have been mentioned as attending its administration, such as excessive pain and irritation of the stomach and bowels, headach, fever, &c. may in certain cases, arise from some peculiarity of constitution obnoxious to mercurial remedies, but are doubtless, in general, to be attributed either to the improper preparation of the corrosive sublimate, or to its having been given in undue quantity. It has been asserted that this mercurial salt is particularly injurious to those labouring under pulmonary affections. That this objection is ideal, or rather that of all mercurial preparations, it applies with least force against the corrosive sublimate, must be evident upon considering the general operation of this form of mercury. Every combination of this mineral may prove more or less injurious in the forming stage of consumption, on account of the active inflammation which is then present, and the additional irritation attendant upon mercurial action. For it may be laid down as a general principle, that mercury is in itself injurious when administered to any considerable extent during the existence of inflammation and febrile excitement, and before the employment of blood-letting or other evacuants.

"From the mild operation of the corrosive sublimate, properly prepared may be inferred the utility of its employment in persons of delicate habit, and in those cases especially where the constitution is materially impaired. In cases of this kind its exhibition is followed with the best effects. That the tonic powers of the system may, however, in certain instances, be so far weakened as to render the employment of every form of mercury not only inefficacious in the removal of syphilitic complaints, but productive of the most distressing symptoms, and consequently, that the use of the oxygenated muriate will at times be the cause of much inconvenience and real suffering, there is left no room to doubt. In irregular cases of this nature, the remedy necessarily fails of producing its ordinary beneficial effects; and as it becomes an additional source of irritation, it greatly increases the debility which already prevails. These effects, as has just been remarked, do not result from the exclusive employment of any particular form of mercury; they seem to arise less frequently from the corrosive sublimate, but are common to all mercurial preparations. For if the constitution has not the power to support the action of mercury, vain is the attempt to eliminate from the system the virus of lues venerea. Hence, in the treatment of certain diseases of hot climates, especially in unhealthy situations, it is not an uncommon practice to administer the bark daily during the whole course, for the purpose of enabling the constitution to bear a sufficient quantity of mercury to subdue the complaint.* Upon the same principle, that learned physician and distinguished writer, Dr. Chisholm, maintains that in the management of disease, a reduction of plethora at the commencement, and the augmentation of the vis vitæ in the advancement, are to be particularly attended to, in order to insure the successful administration of mercury.† Dr. Ferriar has observed instances in which the venereal disease itself assumed a peculiar character owing to debility, where the debility so far prevailed that the constitution had not power to form a genuine syphilis. When this happens, mercury will not ef-

* *Vide* Clarke on the Diseases of Long Voyages.

† Essay on the Malignant Pestilential Fever, vol. 1.

fect a cure. 'Under these circumstances,' adds Dr. Ferriar, 'I have advised with success a course of tonics without mercury, to raise up the constitution to a higher level. Mercury may then be expected to cure,'*—Again, says Dr. Francis,

"That the corrosive sublimate, of all mercurial preparations, soonest effects the system and arrests the action of the venereal virus, is a truth, grounded upon the concurring experience of the most distinguished practitioners.

"It is but proper to state, that the preparation of mercury now recommended, has been employed for the last twenty years in the private practice of Doctor Hosack, and during his attendance at the New York State Prison, New York Hospital, and the Alms-House of this city, as physician of these institutions. It has invariably been found to be the remedy best calculated for the removal of lues venerea, both in its primary and secondary stages: and not a single case is recollected in which the cure has not been permanent. Those injurious effects upon the stomach and bowels, which are so much apprehended, were avoided by a cautious employment of the medicine, and by a due consideration of the peculiarities in the constitution and state of the patient. From this form of mercury, salivation scarcely ever was induced; and while under its influence, the employment of the decoct. guaiac. et sarsaparil. was found to be an excellent auxiliary in recent cases; and in the secondary stage of the disease, where the patient had been neglected, or when improprieties in the cure had been committed, it was almost indispensable.

"Though satisfied that the oxymuriate of mercury possessed full claims to the title of a powerful anti-venereal remedy, from a perusal of the testimony published in its favour, and from a personal knowledge of the result of several cases in which it had been employed; with the view of more fully determining so important a matter, and to ascertain, as far as practicable, whether the objections which have been stated against it, particularly those of the distinguished Mr. John Pearson, were founded in reality, at the suggestion of the writer, the use of the corrosive muriate of mercury was adopted in the spring of the year 1811, in the New York Hospital. From the extensive charity which this excellent institution afforded, there was abundant opportunity of seeing almost every form of this disease, from the more mild to the most aggravated; cases of recent infection, and those of long standing. After a careful examination of the histories of a great variety of cases, a selection was made of several of those patients who were affected with the primary, and of others labouring under the secondary stage of this disease. The corrosive sublimate was given in some instances in the form of the spirituous solution, and in other instances made into pills; the decoction of guaiacum and sarsaparilla was employed as an auxiliary and occasional recourse was had to the application of the lunar caustic; but the external use of every preparation of mercury was omitted. In no one instance were unpleasant effects produced by the action of this mercurial salt; and, contrary to the opinion entertained by Mr. Pearson of the efficacy of this remedy, the result of these several cases was attended with complete success.

"To multiply further arguments, or other additional proofs in favour of the oxygenated muriate of mercury does not seem necessary. It

* Med. Hist. and Reflect. vol. 3, p. 253.

may be confidently pronounced a safe, convenient, and efficacious remedy in lues venerea. How far a too ready acquiescence in the force of authority may be assigned as the cause of that want of confidence in the virtues of the corrosive sublimate, and of that apprehension of its pernicious qualities which at present prevail among many practitioners, it is impossible to ascertain. It is evident that the opinions of Mr. Pearson are those chiefly which have been adopted and reiterated by every subsequent writer who has opposed the use of this mercurial combination. But the success attendant upon the administration of the oxymuriate of mercury furnishes the most satisfactory answer that can be given to those who have denied its efficacy Upon the successful result of the cases of lues venerea which existed in the New York Hospital in 1811, the corrosive sublimate again became the principal anti-venereal remedy in that extensive establishment. This form of mercury, since that period, has also been in general use in the New York Alms-House, in the treatment of syphilis in its different stages; and in most instances it is now employed for the same purpose by the physicians of the City Dispensary. The observation and experience of the writer during the last three years, in a number of unequivocal cases of lues venerea, have tended to corroborate the favourable opinion he formerly expressed, and induce him to recommend with increased confidence a more extended application of this preparation of mercury.

"Various are the forms in which the corrosive sublimate has been used in the different stages of lues venerea, and in other disorders indicating an alterative course of remedies. Its external application, in the form of ointment, has been recommended by some; but against this practice many forcible objections might be brought. The internal use of the spirituous solution of Turner, in which the proportion of ardent spirits to the mercurial salt was remarkably small, has justly been accused as the source of much mischief. The formula of Van Sweiten deserves a decided preference; for the muriated quicksilver dissolved in spirits and exhibited in doses limited to the quantity of one eighth of a grain, two, or, at most, three times in twenty-four hours, seldom produces the least nausea, or any derangement of the stomach or bowels.

"The corrosive sublimate, dissolved in common brandy, in the proportion of two grains of the salt to one ounce of the liquid, is a valuable and convenient preparation for delicate children. It may be given with the greatest safety, in a little sweetened water, to the amount of three or four drops to a child of one year, and repeated three times a day; and to a child of two or three years old six or eight drops three times a day. After its employment two or three days the dose may be increased to ten or twelve drops.

"A solution of the oxymuriate of mercury in common distilled water, with the addition of a little muriated ammonia, (sal ammoniac,) is also a judicious and safe pharmaceutical combination.

"But the best form of administering the corrosive sublimate is that in which this mercurial salt, united by solution with the muriate of ammonia, is made into a mass with the crumb of wheat bread, and then divided into pills.

℞. Oxymuriat. Hydrarg.
Muriat. Ammon. āā gr. xv.
Aq. distillat. vel. font. ℥iss. Solutioni addatur
Panis medul. sic. q. s.
Ut fiat massa, in pil. cxx. dividenda.

"Every pill in this prescription contains, if the materials be uniformly combined, the eighth of a grain of the corrosive sublimate. The dose can therefore easily be regulated with the greatest accuracy. Of these pills one is to be taken every night and morning, though, in some aggravated cases, another pill may be taken in the middle of the day, with additional advantage. In this manner a quarter of a grain of this preparation of mercury will, in ordinary cases, be taken in twenty-four hours; and in the more severe form of lues venerea the additional eighth of a grain. Instances may occur in which it may be advisable to administer half a grain daily. Mr. Bell has given a grain of the corrosive sublimate divided into four or five doses, but has not been able to continue this quantity for more than two or three days together.

"The corrosive sublimate to the amount of one quarter of a grain a day, and, in some cases, an additional eighth of a grain, in pills, may be continued for a long time without producing the least inconvenience in the stomach and bowels, and with greater certainty and more beneficial effects than the same quantity of this salt in the form of the spirituous solution. The use of the corrosive sublimate ought to be continued two or three weeks after the disappearance of the disease, in order more effectually to accomplish a radical cure.

"It has already been observed, that the oxygenated muriate of mercury operates more readily on the constitution than any other form of this mineral, and that even in very small quantity it soonest arrests the progress of venereal symptoms, and, by its general action, eliminates the poison of the disease. It deserves to be stated, that during the use of this preparation, all those precautionary measures with regard to diet and regimen, which are generally recommended by writers, need not be regarded with the same scrupulous attention, while in the use of the corrosive sublimate, as during the employment of other mercurial medicines. For as the corrosive sublimate rarely affects to any considerable degree, the salivary glands, those subjected to its use are not rendered so susceptible of the influence of cold, and the physician is seldom under the necessity of devising means for the purpose of obviating the pernicious consequences of salivation. Instances of peculiarity of constitution may occur which require much management and discretion in the use of this remedy. Mr. Bell has observed, that opiates have not the same influence in preventing an undue action of the oxymuriate of mercury upon the stomach and intestinal canal which they commonly have with other mercurial preparations.* The limited experience of the writer has not in any case corroborated this opinion: on the contrary, he has found an occasional recourse to small quantities of opium highly serviceable.

"As some one or more articles of the vegetable kingdom are, in general, employed in those cases in which the corrosive sublimate is administered, it perhaps would not be irrelevant to examine how far they are entitled to particular confidence. It may be proper to remark, that of the many substances which have been employed as auxiliary remedies, or are now in use, the *lignum guaiaci* and the *radix sarsaparillæ* unquestionably claim the first notice. They are acknowledged to be useful during the administration of the oxymuriate of mercury, in cases of recent affection; and in the secondary symptoms of the disease, for the removal of the evils which have taken place from the in-

* Treatise on Gener. and Lues Ven. vol. 2. p. 248.

judicious employment of mercury, &c. their salutary operation has been uniformly evinced.

"The compound decoction of guaiacum and sarsaparilla may readily be prepared in the following manner:

℞. Rasur. ligni guaiac.
Rad. sarsapar. fissæ. āā ℥i.
Cox. in aq. font. ℔iij. ad ℔ij.

"Of this decoction the above quantity, taken warm, ought to be drunk within the twenty-four hours. Of its effects as a powerful alterative for the removal of some of the most painful symptoms of lues venerea and obstinate cutaneous affections, indubitable evidence exists in the pages of the old and in those of the most eminent modern authors.* During a period of more than forty-five years its virtues for these purposes have been tested in the practice of that learned and distinguished physician, Dr. Samuel Bard, and for more than twenty-five years in the practice of Dr. David Hosack. Its salutary properties appear to be owing chiefly to the general excitement which it produces, and to its action as a diaphoretic. When had recourse to, while in the use of mercury, particularly in the treatment of those cases where the disease is of long continuance, it proves eminently useful by promoting the natural tendency which the corrosive sublimate possesses to increase the cuticular discharge.

"The compound decoction of the guaiacum may be taken with success for the removal of many of the morbid effects produced by the improper employment of the different preparations of mercury, and for restoring the constitution to its wonted vigour. The advantages arising from the use of the *Rob Anti-syphilitique*,† and other *Syrups* and *Panaceas* lately introduced, for which so enormous a consideration is demanded, may with confidence be attributed principally to the sarsaparilla and mezereon which enter into their composition."

For further information the reader is referred to the improved edition of Bell on the Venereal Disease, edited by Drs. Low and Beck of Albany; and to the papers on Mercury, published in the American Medical and Philosophical Register, vols. 3d. and 4th.

Scirrhus and Cancer.

One of the most frequent errors in the operation for scirrhus and cancerous affections, is the non-removal of the entire gland, the seat of the disease; and our author does well when he so forcibly recommends the complete extirpation of the whole glandular substance of the breast, in order to secure against a relapse. With the exception of a single instance, I have uniformly taken out the whole mamma, however small may have been the portion affected with cancer, and I have hitherto had reason to be satisfied with this practice, first recommended, as I believe, by the learned Professor Richter, of Gottingen.

Arsenic most lamentably is too frequently and too freely employed for the removal of tumors of a supposed cancerous nature. It is not

* *Vide* Aphrodisiacus, Ed. Boerhaavii. Also, Hunter, Bell, &c.

† *Vide* M'Neven's Account of the Rob of Laffacteur, in the New York Med. and Phil. Journal, Vol. 3. p. 23.

long since, that a very respectable citizen of New-York fell a victim to this empirical method of treatment. An encisted tumour existed on the side of the neck, and arsenic, in the form of unguent, was applied for the purpose of removing it. The removal of the tumour was indeed effected, but the patient, by the long continuance of the application, lost the use of his right arm, and the muscles of the back of his neck, and also those on that side of it from which the tumour was taken. In consequence of this paralysis, his head to a considerable degree was thrown upon his breast, from an inability in the muscles necessary to elevate it. This distressing affection constantly increased, and finally terminated in the sudden death of the sufferer. Similar facts have frequently come within my knowledge, of the injurious effects arising from the application of this mineral, as employed for the purpose of removing supposed cancerous tumours.

The process by mechanical pressure, lately adopted by Samuel Young, of the Middlesex Hospital, for the cure of scirrhus and cancer, and which Dr. Thomas notices at sufficient length, has not been, as I am credibly informed, attended with the success its author anticipated : an inference, indeed, very obvious to one in anywise acquainted with the pathology of the disorder.

Vermes.

Among the daily diseases to which the physician is called, are those arising from supposed worms. With the exception of the tape worm, (the tænia solium and tænia vulgaris,) and the ascarides, (the ascaris vernicularis,) inhabiting the mucus accumulated in the lower portion of the rectum, I have been long in the habit of considering worms among the symptoms of *dyspepsia ;* and very rarely as constituting an idiopathic disease. Nor have I ever been in the practice of directing the various anthelmintic medicines usually prescribed for the removal of worms ; my only prescriptions have been, after an active cathartic of calomel and jalap, and the removal of all febrile symptoms, to put the patient upon the use of the tincture of aloes, with myrrh, (the elixir proprietatis,) in doses sufficient to keep the bowels soluble ; say from two drachms to half an ounce, mixed in sweetened water every morning, fasting for three days successively ; renewing it afterwards as occasion may require. I then direct, if the child be greatly debilitated, the use of some preparation of iron ; either the filings or the carbonate, in combination with a small portion of ginger. Eight or ten grains of the former with two of the latter, administered twice a day, in syrup as its vehicle.

These medicines, with a diet calculated to impart vigour to the digestive organs, are, in my opinion, infinitely more successful in the removal of worms, and other symptoms of derangement of the gastric organs, than all the anthelmintics I have ever seen directed as such. Indeed the practice of *worm-hunting*, so fashionable among practitioners, as well as the promiscuous prescription of calomel and other forms of mercury, are to be reprobated as empirical, and not unfrequently productive of worse evils than those they were intended to remove.

Observations on the use of Emetics in constipation of the Bowels.

In the treatment of constipation of the bowels, it appears to be generally agreed upon by the profession, that when we fail to evacuate the intestines by the various cathartic remedies ordinarily prescribed for this purpose, the last resource is mercury carried to the point of salivation; at the same time trusting to opiates and antispasmodics to allay the pain, and to the usual antiphlogistic means of subduing any inflammation of the bowels that may be induced in the course of the disease. In the year 1796 I communicated to Dr. George Pearson of London, a remarkable instance of constipation yielding to this treatment, after twenty-one day's continuance of the disease.* Reflecting upon the manner in which mercury operates in relieving cases of this nature, after the gums have become affected, it occurred to me that the action of this metal is not only by its effects upon the secretions in general, but more especially upon the biliary organs. The dark coloured and acrid discharges that succeed to this operation of mercury, appear favourable to this explanation. In like manner the general derangement of the digestive organs, the foul tongue, the offensive breath, the sallow complexion, that usually precede and attend upon the first stage of this disease, no less point to this obstructed and torpid state of the liver, as having great agency at least in predisposing to the disease in question, while a check of the perspiration and certain articles of diet, are not unfrequently the exciting causes of irritation and of the spasm and inflammation which ordinarily constitute an attack of this complaint. With these views I was led to the use of emetics as best calculated to remove the hepatic obstruction which appears to lay the foundation of this disease, while by their febrifuge and antispasmodic operation they are no less useful in removing the fever, the inflammation and constriction that constitute some of the most distressing as well as dangerous symptoms that attend a constipated state of the belly. The cases which have fallen under my care, since the adoption of this mode of treatment, are so favourable to the views suggested, that agreeably to my promise, I now submit them to your consideration, and if you deem them deserving more public notice, have the goodness to give them a place in your Journal.

1st. Mr. W. B. of Dutchess county, who had suffered a very severe and dangerous attack of constipation, of which he had been relieved by mercury, prescribed by the late Dr. Bard, after a great variety of the ordinary cathartics had been administered in vain, when on a visit to New York, was seized with the same symptoms of distress and obstruction of the bowels that appeared at the commencement of his first attack. I observed his countenance to be sallow, his tongue covered with a yellow sordes, his breath offensive, his stomach disturbed, but the arterial system not yet sensibly affected. The ordinary cathartic medicines being rejected, I gave him an emetic of tartarized antimony. It operated freely, producing a general relaxation of the system, with some discharges by vomiting of bilious matter, which, from its viscidity and dark colour, appeared to have been long pent up in the gall-bladder: they were succeeded by copious evacuations by stool. He was instantly relieved, and was himself sensible that by this timely prescription he

* See Duncan's Annals of Medicine for the year 1796, vol. i. Edinburgh.

had been saved from a renewal of the same sufferings he had experienced in his first attack.

2d. Mr. S. W. a merchant of this city, whom I had frequently attended in very severe and dangerous attacks of constipation, and which only yielded to mercury, administered to the point of salivation, some years since experienced a renewal of the symptoms that usually had announced a visitation of his disease. I found him in great pain, his bowels in a state of violent constriction, his pulse small, his countenance sallow and livid ; I gave him instantly fifteen grains of ipecacuanha combined with two of emetic tartar. It operated freely, both by vomiting and by the bowels. He was immediately relieved, and had no return of the obstruction.

3d. Mr. W——e, a gentleman of the bar, who had also been frequently my patient under obstinate constipation, and had been relieved by blood-letting, blisters, the warm bath, enemata, and mercury given to the extent of salivation, experienced one of his usual attacks. I gave him an emetic of ipecacuanha and tartarized antimony. It also had the same good effects of restoring the biliary evacuations, and of removing the intestinal obstructions, without having recourse to the ordinary efforts that had been directed on former occasions. I have in like manner relieved the same gentleman, by an emetic in a second attack of a similar nature.

4th. The late lieutenant Walter Stewart, a highly meritorious officer of the United States Navy, had suffered numerous attacks of this disease in Philadelphia. In some of those he had been relieved by blood-letting, the warm bath, and injections of tobacco smoke, as directed for him by the late Dr. Wistar, but in most the obstruction was not removed until recourse was had to mercury, administered to the point of salivation, and which, in his case, required a much longer continuance of the medicine than is usually necessary to produce that effect. When in New York, he twice experienced a return of the same disease ; in both instances I directed for him an active emetic, which afforded him immemediate relief, by producing copious bilious evacuations from the stomach, followed by large discharges from the bowels.

5th. Miss L———, who is constitutionally inclined to a torpid state of the intestines, and is very liable to obstinate attacks of constipation, has been three times under my care in this disease. After directing in vain the various cathartics ordinarily prescribed, and all the usual forms of enemata, I at length directed the emetic before mentioned: it was followed by immediate relief, although the disease had been of several days duration. Upon another occasion I directed the emetic in the commencement of her complaint, with the same successful result. The same young lady a short time since experienced a return of the same disease, but attended with more severe pain than she had suffered upon any preceding occasion. Being confined to my bed, I requested an eminent physician to visit her ; he found her bowels had been confined about seven days, attended with symptoms of intestinal inflammation. After letting blood from the arm, he directed fomentations to be applied to the abdomen, and enemata variously composed to be administered, and advised castor oil, salts, calomel and jalap, in succession, but all to no purpose. The purgative medicines were rejected by vomiting ; the enemata were returned as they were administered, without containing the least portion of fœcal matter. She earnestly solicited an emetic to be given her, urging that she had been relieved by this means in both

of her former attacks; this was declined by the physician, who considered it to be a hazardous practice to prescribe emetic medicines in a case of this nature. Recourse was had to calomel and opium; salivation was the result, but without the relief by the bowels which usually follows this operation of mercury. Upon my recovery I visited her; she still suffered severe returns of pain: her mouth had been sore three or four days, but notwithstanding the use of enemata, which had been frequently administered as fomentations to the bowels when her pain was most severe, no alvine discharge whatever had taken place. Although 15 days had elapsed since the commencement of her obstruction, I gave her an active emetic, viz. fifteen grains of ipecacuanha and two of tartarized antimony, directing it to be repeated at the expiration of an hour if necessary: the first operated very freely, discharging a large quantity of dark-coloured bilious matter by vomiting, followed by similar copious evacuations by stool. In twenty-four hours she was so entirely relieved that my attendance became almost unnecessary, except for the removal of the soreness of the mouth, that remained from the mercury that had been prescribed; for this purpose a gargle of yest, honey, and borax, was directed, with occasional small doses of calcined magnesia, to preserve the bowels in a soluble state.

6th. Captain A. who had contracted, in the East Indies, a disease of the liver, has recently been affected by a constipated state of the belly, attended with spontaneous vomiting; finding no relief from injections, and all cathartic means given by the mouth being rejected, I gave him an emetic. As in the former cases, it was followed by a general relaxation of the system, and plentiful discharges both by the stomach and bowels.

7th. In another case of a young gentleman, who had experienced many severe attacks of constipation, attended with high inflammatory symptoms, in which, in addition to the use of mercury it had been necessary to make repeated use of the lancet and other means of counteracting the attending inflammation, I have also recently directed emetics with the best effects, not only in obtaining discharges from the stomach and bowels, but also in removing the pain, in spasmodic constriction, and febrile symptoms, which have usually attended every return of his disease.

From these facts I have been led to the following conclusions:

1st. That a constipation of the bowels is usually attended with, and frequently produced by, a torpid state of the liver, and consequent deficiency of the biliary discharge.

2d. That the pain, spasmodic constriction, and inflammation, attendant upon this disease, are the result either of the mechanical obstruction occasioned by the deficiency of bile, and consequently a retarded peristaltic movement of the intestines, or the effect of a sudden change of perspiration, or of a particular article of diet.

3d. That in the commencement of constipation, or in its more advanced stage, when the symptoms of inflammation have been subdued by the lancet, emetics may be very advantageously exhibited both for the purpose of removing the hepatic obstruction and of counteracting the spasmodic constriction and pain ordinarily attendant upon this disease.

4th. That the salutary effects which have been occasionally derived from injections of tobacco smoke are attributable to the general relaxa-

tion, the nausea, and in some cases, the vomiting, which that narcotic produces.

5th. That the benefits that have in like manner been obtained in some cases from the use of tartarized antimony, administered by injection, are to be accounted for by the nausea and vomiting that have been the effects of its operation, but which are to be obtained with more certainty from the same medicine given by the stomach, and to the extent of full vomiting.

In like manner, inasmuch as a torpid state of the liver and a diminished secretion of bile are generally known to constitute a part of the proximate cause of dysentery,* we obtain a satisfactory solution of the salutary operation of injections of ipecacuanha in that disease, as advised by Dr. Thomas Clark ;† but which effects are more certainly to be obtained from the use of ipecacuanha given by the stomach, as prescribed by Sir John Pringle, or of tartarized antimony, as recommended by Senac.

Mineral Waters of Ballston.

I have considered it not wholly foreign to the object of these *Notes* to make a few remarks on the medicinal properties of the Ballston, and Saratoga Springs. No mineral waters in the United States enjoy an equal celebrity, and as none are more generally resorted to by invalids, perhaps none are more indiscriminately used. Correctly to ascertain their properties becomes, therefore, an object of importance to every physician.‡

Several analyses of the Ballston waters have been communicated to the public ; according to the analyses made by Mons. Caizalet, a teacher of chemistry at Bordeaux, a bottle of the Ballston water containing 25 ounces afforded

1.	Carbonic acid, three times its volume.	
2.	Muriate of soda,	31 grains.
3.	Super saturated carbonate of lime,	22 grains.
4.	Muriate of magnesia,	12½ grains.
5.	Muriate of lime,	5 grains.
6.	Carbonate of iron.	4 grains.

This subject has also recently received the attention of Dr. William Meade of Philadelphia, a gentleman well skilled in practical chemistry, and who has made frequent visits to the springs both of Ballston, and Saratoga, for the express purpose of making an accurate analysis of those celebrated waters.

* See Dr. Monro, Cleghorn, Pringle, and Girdlestone.

† Observations on the Diseases of the East and West Indies, by Thomas Clark.

‡ The Yellow Springs of Virginia, and the waters of Stafford Spring, in the state of Connecticut, might be noticed among the mineral waters of the United States. The Schooley's Mountain waters in the State of New Jersey have lately attracted a considerable degree of attention, and been resorted to by many. A minute and interesting analysis of these waters has been published by Dr. M'Neven, Professor of Chemistry, in the Transactions of the Literary and Philosophical Society of New York, vol. 1.—This water seems to be chiefly valuable in calculous complaints.

The reader desirous of further information on this subject is referred to the work published by Dr. Meade, entitled "An Experimental Inquiry into the chemical properties, and medicinal qualities of the principal mineral waters of Ballston and Saratoga."

The Ballston waters have been long known to yield a great quantity of *fixed air*, and to hold in solution a large portion of *iron*. By the analysis now given, it appears that they yield a much larger proportion of fixed air, and that they contain a greater quantity of iron, than any other mineral water that has hitherto been discovered, not excepting that of Vichy, in France, one of the strongest chalybeate waters in Europe. But it appears that they also contain another substance, viz. the *muriate of lime*, which, with the other ingredients with which it is associated, promises to be of great and extensive utility.

We are accordingly from the above analysis induced to ascribe more virtues to the Ballston waters than physicians have generally believed them to possess. Although much is due to exercise, change of air, and an agreeable occupation of the mind, which the amusements of watering places usually afford, I have no doubt, from the sensible effects produced upon the system by the waters themselves, that they are also productive of great good in a variety of diseases, some of which I shall now briefly enumerate.

1st. From the effects of the Ballston waters, as a strong *chalybeate*, they may be employed with advantage in most diseases of debility, whether directly or indirectly such. But in those complaints which are attended with an increased excitement of the whole system, or with local inflammation, they are manifestly prejudicial. These principles are deducible from the qualities of the waters alone; but they are also confirmed by the experience and observation of physicians who have attended to their operation.

Accordingly in *intermittent* fever, *dropsy*, *dyspepsia*, *hypochondriasis*, and *hysteria*, connected with, or proceeding from debility of the digestive organs; in *paralysis*, *chronic rheumatism*, *gout*, in its chronic state, *chlorosis*, *fluor albus*; in *suppression* of the *menses* when arising from weakness, in worms, and in other diseases of debility, whether of the intestinal canal, or of the whole system, the Ballston waters have been long and justly celebrated. On the other hand, in a plethoric state of the system, as in *pregnancy*, in *consumption of the lungs*, *inflammation of the liver*, *acute rheumatism*, *dysentery*, and other diseases of an *inflammatory* nature, in which they are oftentimes resorted to, they invariably do injury. We may, perhaps, except from this remark a *species of consumption* which arises in females about the time of puberty, in which, from want of energy in the system, menstruation does not take place at the period in which it usually appears; dyspepsia ensues, followed with general irritation of the nervous system, pain in the breast, cough, sometimes hæmorrhage from the lungs, and ultimately terminating in comfirmed consumption. These consequences have frequently been prevented by a course of iron and vegetable tonics, aided by generous diet, and exercise, especially riding on horseback. Under similar circumstances I have no doubt that the Ballston waters may be serviceable in this species of phthisis in its incipient state; but they should never be employed in diseases of this nature without the advice of a physician.

From the saline impregnation of these waters, and their operation upon the urinary organs, as well as by perspiration, they are indicated

in diseases of the *kidneys* and *bladder*, in *gout*, *chronic rheumatism*, and *eruptions* upon the skin, and all which diseases are most frequently produced by, or connected with, a morbid condition of the fluids, and an impaired state of the secretions. In these complaints, I have repeatedly prescribed these waters with the best effects.

Dr. Thacher, the author of "The American Modern practice," a work containing much original and valuable information, concurs in the opinion of the general efficacy of the Ballston waters in diseases of debility, and that they are peculiarly beneficial in *calculus and gravel*, some cases of which have come within his own particular knowledge—and upon the information of Dr. Powell, whose residence at the springs gave him a free opportunity of ascertaining the fact, he adds, that rarely a case of gravel occurred in which relief was not obtained.*

But according to the foregoing analysis, they contain an ingredient of great value, besides those already enumerated; I mean the *muriate of lime*. It appears upon the authority of Dr. Beddoes, Dr. R. Pearson, Dr. Wood, and Dr. Schraud of Vienna, that this substance has lately been discovered to be a remedy for *scrofula*, which hitherto has been the opprobrium of our profession. It is true, cases have been recorded by Russel and others of the cure of this disorder by the use of sea-water. But as it has been ascertained by chemists, that the muriate of lime enters into the composition of sea-water, it is very possible that much of the efficacy of the latter, in that disease, may be derived from the muriate of lime which it has been found to contain.

But as scrofula is usually attended with a general debility of the system, as well as a morbid condition of the fluids, the Ballston waters will probably be found peculiarly serviceable, inasmuch as they possess the means of invigorating the system, at the same time that they contain the antidote to the peculiar virus of that disease.

But to obtain the benefits of the Ballston waters in any of the diseases which have been noticed, it is necessary that in the use of them, as it regards the time of taking them, the quantity taken, the stage of the disease, and other circumstances which must govern their exhibition, the directions of a physician be particularly attended to. As well might the patient make use of any other article of the materia medica without medical advice, as drink these waters in the manner in which they are usually taken. It is but a short time since that a very valuable life was destroyed by the imprudent use of them during a state of pregnancy. I was lately consulted by two gentlemen who had left the springs much worse than they had gone to them. The one laboured under dyspepsia, attended with habitual costiveness. Neglecting to relieve his bowels, he commenced the use of the waters; the consequences were, an aggravation of his disease, followed with fever, acute pain in the head, and other symptoms of general excitement. The other person referred to, had come from Virginia, on account of an obstinate chronic diarrhœa, attended with great debility, and general emaciation. Without advice, he immediately began to drink the waters to the quantity of several quarts daily. The consequences may readily be imagined: an increase of his disease, and a degree of debility from which he with difficulty recovered.—*See Amer. Med. and Philos. Reg.* vol. 1.

* See Thacher's American Modern Practice.

The administration of these remedies therefore requires some attention. Upon this subject, the following judicious remarks by Dr. Dyckman, contained in his excellent American edition of Dr. Duncan's New Dispensatory, merit the observance of those who visit Ballston and Saratoga, to obtain the benefit of those waters.

"The doses must be regulated by the constitution of the patient, the state of the stomach, the nature and stage of the disease, and the effects produced. In large quantities, as from a pint to a quart, they usually operate gently as a cathartic; but in small doses their action is determined more particularly to the kidneys and skin. In general, they should be drank till they produce a slight evacuation from the bowels. Care, however, should be taken never to distend the stomach so as to occasion inconvenience. If from one to two or three pints daily produce no sensible effect, the quantity of fluid will be apt to prove more injurious as a load, than useful as a medicine. In most instances, perhaps, it will be advisable to begin with small quantities, and repeat them often. When taken to an improper extent, particularly if they do not produce some effect as a purgative or diuretic, they not unfrequently occasion much distress and disturbance of the whole system, being followed by anxiety, headach, or vertigo, perturbation, pains in the stomach and bowels, or spasms. They should not be employed when the stomach and bowels are overloaded, or just before or after meals. When intended to act as an aperient the proper time for administering them is in the morning before breakfast. Their operation will be facilitated by the exercise of walking or riding. Taken after a meal, they are less apt to affect the bowels than they are the kidneys and skin."

The Black or Livid Colour of Infants.

The disease to which Dr. Thomas alludes under this name, is doubtless that complaint of infancy which Underwood has given a sketch of, as proceeding from "*an imperfect closure of the foramen ovale.*" As Dr. Thomas states, that he knows of no remedy for this disorder, I am induced to offer the following account of two of several cases which I have had under my care, with the mode of treatment that proved successful; more especially, as Dr. Underwood also, even in the last edition of his work on the Diseases of Infants, has not given us a satisfactory history of this formidable disorder.

Case I.—On the morning of 30th of October, 1797, I was sent for to visit a child of N. P. of this city: it was seven days old, of apparently good constitution, and had been in perfect health from its birth.

I was informed it had been suddenly taken ill in the night, and that it awoke with an unnatural screaming, which was the first symptom of its indisposition. Mrs. P. considering its complaint to proceed from some disorder in the bowels; gave it a dose of *castor oil*, which operated freely, but without any abatement of its symptoms: a drop of *laudanum*, was then administered, but without the smallest benefit; the child still continued screaming every few minutes, but after each fit it was perfectly quiet, and apparently free from pain; but would not take the breast. Finding no relief from the oil or opiate, Mrs. P. became alarmed, and early in the morning I was called to visit it. In a few minutes after I had entered the room, it suddenly screamed out two or three

times. I at once perceived that this was not the natural cry of the child, and took a seat with the view to examine its symptoms more particularly. The fits of screaming returned about every ten or fifteen minutes; immediately after each fit, the countenance appeared natural, both as to the complexion and composure of its features, and the pulse beat with its usual frequency; but in the course of about five or six minutes, respiration became entirely suspended; the eyes now assumed a vacant stare; the countenance changed its colour; instead of the natural florid hue, it became of a dark livid bluish colour: this change was first perceived about the upper lip and chin, and was apparent to every bystander; the pulse became less frequent, and very irregular; in about eight or ten minutes the blueness was extended over the whole face; the extremities underwent a similar change of colour, attended with some coldness: at this time the pulse was scarcely to be perceived; in a word, the child, at this moment, manifested every symptom of approaching death. In this critical state of things it again suddenly screamed, throwing out its arms and legs as in convulsions, and took two or three violent inspirations: after these efforts, respiration was again entirely suspended; but, notwithstanding, its circulation was again for a short time restored, the leaden colour of its countenance disappeared, and its natural complexion, for the moment, perfectly returned. These last favourable symptoms did not continue: as before, in a few minutes, respiration being entirely suspended, the countenance became livid and blue; the circulation became slower and very irregular, and the extremities lost their heat. Such was the condition of the child, until another fit of screaming restored the respiration for a moment, which gave new energy to the circulation. I was now satisfied that the bowels had no connexion with its present complaints. Having seen the disease in three other children, I readily recognised it; but as in all those, it proved fatal, I had not the smallest hope of its recovery. In those cases evacuations were first employed, and afterwards anodyne medicines were administered, upon the principle that the disease was of a spasmodic nature; but as these remedies were not attended with any relief or advantage, I resolved to try the effect of a stimulant mode of treatment. Accordingly, I applied a small blister upon the breast, and two others behind the ears; cataplasms, composed of rye meal, vinegar, and mustard, to the soles of the feet; bathed its whole body with warm brandy—afterwards, with diluted spirits of sal. ammoniac; and, from time to time, we attempted to give it a spoonful of wine whey, but to no purpose, as it was incapable of swallowing. This treatment was pursued for two or three hours; in the beginning it appeared to promise relief; the fits of screaming did not return so frequently; respiration continued a longer time, and the circulation became more vigorous. In about four hours the blisters produced their effect; upon their operation we had great reliance; but they produced no sensible alteration in the state of the disease: the fits still continued to return as in the beginning, and with the same succession of symptoms as above described.

Six hours had now elapsed; the cries of the child became more feble; respiration was suspended for a greater length of time than in the commencement of the disease, and the circulation became less vigorous: these, with the greater coldness of the extremities, confirmed us in our fears of the event.

Having frequently employed a stimulating bath, prepared with bark and spirits, in the latter stages of malignant fevers, and diseases of great debility, I determined, as a last resource, to give it a trial in the present case. I therefore directed four ounces of powdered Peruvian bark to be boiled for a few minutes, in about two gallons of water; to this, when fit for use, a pint of Jamaica spirits was added: when it was cooled to a temperature rather above that of the body, the child was immersed in it up to its neck: and to render the bath more stimulating, I added from time to time, a small quantity of the spirits of sal. ammoniac.

In a very short time a favourable and very apparent change took place; respiration, while the child remained in the bath, was perfectly restored; the circulation became vigorous and active; the countenance resumed its lively hue; the eyes recovered their natural expression; the power of swallowing returned, and, in every respect, the child manifested symptoms of relief. In this state of things we removed it from the bath, wrapped it in warm dry flannels, and put it to the breast. To the great joy of its mother, it returned to it with eagerness; it remained composed, and free from complaints a considerable time, perhaps for the space of half an hour. At the end of that time, respiration became irregular, and was again interrupted, followed with the same change in the circulation and in the colour of the skin as has already been described. The bath was employed a second time, and with the same relief as before. It now fell into a sleep, remained so for an hour, breathing freely; its circulation regular, and the child, to all appearance, freed from its complaints. At the end of this time we were again alarmed with the same distressing symptoms of screaming, and interrupted respiration, with which it was first attacked; but the bath as readily relieved it a third time. As far as I can recollect, it had two or three more paroxysms, but they were of shorter duration, returned after longer intervals, and were uniformly relieved by the use of the bath. Since that time the child has had no return of the disease, and is at present in perfect health.

Case II.—In the month of December, a child of my brother, Doctor Alexander Hosack, was suddenly seized with the same disease, and attended with precisely similar symptoms: it was six weeks old, of good constitution, and had been remarkably healthy. I was immediately called to visit it, and upon entering the room was told that I had come too late, and that the child was dying. At this time respiration was completely suspended, the face of a dark bluish colour, the circulation weak, and very irregular, and the extremities were almost cold. I instantly directed a bath to be prepared in the same manner as I had done for Mr. P.'s child: in the meantime the disease underwent nearly the same change and succession of symptoms as were described in the preceding case. When the bath was prepared, the child was immersed in it; in a short time, the respiration became regular; the child was continued in the bath about fifteen minutes, but was by no means relaxed, as by the operation of the bath of warm water alone. When it was removed, it appeared to be perfectly relieved, and remained so for the space of twenty minutes, or half an hour; when the fit returned, but was of shorter continuance, and less violent: the bath was employed a second time, which completely removed all complaint. The child is now living and in good health.

Cholera Infantum.

Cholera infantum is a disorder of a very fatal nature in this climate, especially in the summer and fall months. It may properly be considered as similar to the autumnal remittent of adults. Dr. Mann of Wrentham, (Mass.) in his valuable prize dissertation on the autumnal diseases of children, has taken a similar view of the disease; accordingly, instead of prescribing anodyne and astringent mixtures to lessen the discharges by the bowels, which are probably the effect of the severe excitement of the system occasioned by the heat of the season, and frequently the additional irritation of teething, we more rationally direct those remedies calculated to allay the general febrile excitement, and thereby to remove the irritations of the intestinal canal. Accordingly it has been found, that the most successful mode of treatment is in the first instance to empty the stomach and bowels with small doses of ipecacuanha and rhubarb. Calomel and antimonial medicines are also frequently prescribed with good effect in this stage of the disease. When the stomach and bowels are freely evacuated by these means, if the fever continues, small doses of ipecacuanha may still be continued with advantage for the purpose of preserving a perspirable state of the surface of the body. Warm bathing is also at this time made use of with advantage. When the febrile symptoms are removed, weak brandy and water, or port wine and water, beef tea, the liquor of clams or oysters are most grateful, and also most useful in restoring the tone of the stomach and bowels. But if the irritations of the intestinal canal continue after the febrile symptoms are removed, the chalk julep of the dispensatory, with the addition of laudanum or paregoric elixir, is very advantageously prescribed. In some instances where the diarrhœa is attended with tenesmus, severe gripings, and the discharges are tinged with blood, small injections, composed of starch and laudanum, are more effectual in relieving the sufferings of the patient than anodynes administered by the stomach, while they are less apt to disturb the functions of that organ; in other instances astringent remedies are indicated to restrain the profuse liquid evacuations from the bowels. For this purpose, nothing will be found more effectual than an infusion of the root of the marsh rosemary, the statice limonium of Linnæus. But of all the remedies prescribed, either for the purpose of preventing or of curing this disease, I know of none so effectual as removal to the cool air of the country, particularly near the sea shore, where the atmosphere is not only cooler, but in a peculiar manner restores the appetite and strength of the patient. "It is extremely agreeable," says Dr. Rush, "to see the little sufferers revive as soon as they escape from the city air, and inspire the pure of the Country."* But among the means of prevention may be recommended the use of flannel worn next the skin; this preserves the action of the vessels of the surface, at the same time that, as a non-conductor, it guards the tender infant from the extreme heat and vicissitudes frequently experienced in the hot season of the year. Warm bathing, at this season, by lessening the effects of heat upon the system, is no less to children than to adults.

* Med. Inquir. & Observ. vol. 3. p. 379.

Syphilis Infantum.

Many authenticated cases have been published by Mead, Jenner, and others, of small-pox communicated to the fœtus in utero; and in Dr. Pearson's paper in the Medical Commentaries of Edinburgh, the reader will find abundant evidence of this truth. Two cases of this sort occurred to me in 1791 while I practised physic in Alexandria, Virginia.*

The fœtus in utero, may, and occasionally does, become affected with the *venereal* disease, derived from the mother labouring under the disorder of a constitutional form. The ulcers which at times occur in the mouths of children, the offspring of such infected mothers, have produced the same disease upon the nipples of nurses by whom they have been suckled. These women have imparted the affection to other children, and these children again to other nurses. Facts of this nature most satisfactorily establish the principle that not only the blood itself may be vitiated by the matter of certain diseases, but that the secretions themselves are capable of communicating the virus of certain specific affections to the healthy constitution. It were easy to relate the particulars of several cases for which I have prescribed, the pathology of which is capable of being explained upon no other principle. Two instances have fallen under my notice, and several are recorded upon respectable authority. It ought, therefore, no longer to be a disputed point with writers on medical jurisprudence.

The mode of treating these affections of infants is satisfactorily stated by Dr. Thomas. The corrosive sublimate in solution made in the manner already mentioned, is the form I constantly use. It may be given to the mother or nurse, and produce all the salutary effects desired on the constitution of the child; it may likewise be administered to the child itself with perfect security. In a work now in the press I have treated this subject more in detail than will be consistent with the objects of this appendix.†

Observations on Ergot: communicated in a Letter to James Hamilton, M. D. F. R. S. E. Professor of Obstetrics in the University of Edinburgh, &c.

New York, June 2d, 1822.

Dear Sir,

You have probably seen, in the Medical Journals of this country, the various papers which have been published upon the use of ergot, spurred rye, or secale cornutum, in cases of difficult parturition. The testimony with regard to its specific operation upon the uterine system is very abundant, as you will see by adverting to the communications of Dr. John Stearns, Dr. William Moore, and Dr. Dyckman, of this city: of Dr. Chatard of Baltimore; of Dr. Prescott of Massachusetts; and of Professor Chapman of Philadelphia, besides many others, to whom I might refer. In three cases of long protracted labours, wherein all the

* Medical Commentaries of Edinburgh, vol. xix. p. 249.

† See Medical and Philosophical Essays by the author of this Appendix, vol. 2. p. 111.

ordinary resources had been exhausted, the use of instruments excepted, and the patient's strength had become expended, I have, as the result of consultation, prescribed the ergot, giving it in infusion, and in the ordinary doses.

Its effect was, within fifteen minutes after its exhibition, to excite the uterus to violent action, which did not cease but with the expulsion of the child. Although no evidence existed, previous to the use of medicine, that the fœtus was not living, in every case in which it was administered the child was still-born. The same fact I have witnessed in the practice of others. The remark is made by an eminent and judicious practitioner of this city, Dr. William Moore, that the ergot has proved fatal to the child in almost every case in which he has prescribed it.—"It appears," says he, "to be injurious to the child at all times; for in every case, in which I have seen it exhibited, the child has been still-born; and, in the greater part of them, it was not possible to restore it to life." This fact has been conceded even by those who have been most partial to the use of the ergot, and who have been in the habit of prescribing it. It is also true, that, since the introduction of the ergot, the number of still-born children, noticed in the obituary of this city, has greatly increased,—insomuch, that an inquiry has been instituted by the Medical Society of the County of New York, and a committee appointed to prepare a statement of the facts on this subject. The ergot has been called, in some of the books, from its effects in hastening labour, the *pulvis ad partum*: as it regards the child, it may with almost equal truth be denominated the *pulvis ad mortem*: for I believe its operation, when sufficient to expel the child, in cases where nature is, alone unequal to the task, is, to produce so violent a contraction of the womb, and consequent convolution and compression of the uterine vessels, as very much to impede, if not totally to interrupt the circulation between the mother and child. It is stated by Dr. Chapman, in his observations* on the effect of ergot, that it has been used, by himself and others, in a hundred cases, without doing harm in any respect. A similar remark has been made by others. I will not call in question the correctness of these observations; but in the cases referred to, I apprehend the medicine has been employed where the impediment to labour has been very inconsiderable, and the child was readily expelled under its influence, and where perhaps no necessity whatever existed for the use of the medicine, and where nature, left to herself, would have readily accomplished her work.

In the first case in which I prescribed it, the lady, previous to her pregnancy, had been many years married without proving with child, owing to dysmenorrhœa and fluor albus, which we know are oftentimes associated—the latter disease being generally consequent upon the former. Since her delivery, the same painful and sparing menstruation has recurred; and, although nearly three years have elapsed since her lying-in, and she has enjoyed, in other respects, good health, she has not been a second time pregnant.

In the second case, the lady has not menstruated since her confinement, which took place in October, 1820; nor, consequently, I may add, has she proved pregnant. I say consequently, for we know that the exceptions are so rare that impregnation takes place where the catamenia are suspended, that it may be considered as a general obser-

* See Therapeutics, vol. ii. p. 14.

vation, that menstruation is necessary to conception. At the same time that I relate the fact of the diminution of the menstrual discharge, in the one case, and the suspension of it in the other, as following the use of the ergot, we should be cautious not to connect these events as, in all cases, cause and effect, until further experience shall justify such inference.

In the third case in which the ergot was administered, the child was living a few minutes before the medicine was taken. Severe pains immediately succeeded to its use, and were continued, without intermission, until the delivery was accomplished: but, to the astonishment of all present, the child was still-born; and all endeavours to restore it were employed without success.

When, in connexion with the above cases, we advert to the numerous instances recorded of the fatal effects of the ergot upon the fœtus in utero, have we not reason to proscribe, altogether, the use of this medicine in difficult labours, and, as heretofore in such cases, to place our dependence upon that safer resource, the forceps?

But while, like other potent articles of the materia medica, the ergot proves detrimental under certain circumstances, and is liable to much abuse from its improper administration, nevertheless, by its active operation upon the womb, it promises to be very extensively useful in counteracting many morbid conditions to which that viscus is liable, especially those proceeding from an inactivity in the muscular powers of the uterus, or a lax state of its vessels. Under the former head may be noticed the retention of the placenta, and the disease called physometra; under the latter are, excessive discharges of the lochia, fluor albus, and those uterine hæmorrhages, which proceed from, and are continued by, general and local weakness.

This leads me to the main object I had in view when I commenced this letter, to relate a case of uterine hæmorrhage in which I directed the ergot with the most decided benefit, when other means had been employed in vain.

Mrs. L——, a lady about fifty years of age, of a plethoric but relaxed habit of body, ceased to menstruate about four years ago. Since that time she has evinced the ordinary symptoms of fulness of the blood-vessels, that frequently supervene upon the cessation of that function—viz. a sense of distention and pain, in the region of the uterus; a fulness of the breasts; oppression of the chest; frequent headach and giddiness. By blood-letting these have been several times removed; but neglecting this remedy when those feelings returned, uterine hæmorrhage was the result followed by great loss of strength. In this debilitated state, in which further depletion was forbidden, I had recourse to the various vegetable and mineral astringents, administered internally and externally, but without effect; cold also was applied to no purpose. In this lax state of the uterine vessels, I directed 10 grains of the ergot to be given in substance three times a day. In a few minutes after the exhibition of each dose, it was followed by the uterine nisus, which immediately stanched the discharge. In a few days, by suitable nourishment, and the continuance of the tonics which she had before employed without the effect of restraining her discharges, she recovered her strength.

In the course of the last month, she experienced some return of the hæmorrhage; but, by a few doses of the ergot, the discharge was as immediately restrained as it had been in the first attack.

Seeing these effects of the ergot in producing uterine contraction and in checking hæmorrhage, it has occurred to me, that it promises to become a valuable medicine, in those cases of uterine hæmorrhage that proceed from an attachment of the placenta to the neck and orifice of the womb. The os uteri being dilated, there is certainly much less danger to be apprehended, either to the mother or the fœtus, from the rapid succession of pains, the effect of the ergot, than from the introduction of the hand and turning the child—the practice usually directed in cases of this nature.

In three instances of hæmorrhage, attendant upon the attachment of the placenta over the orifice of the womb, by passing a finger on one edge of the placenta, I ruptured the membranes and discharged the waters; pains immediately succeeded, and the delivery was speedily accomplished with safety, both to the mother and child. Had I at that time been acquainted with the effects of the ergot, I certainly should have prescribed it, for the purpose of hastening the delivery.

Upon suggesting to Dr. W. Moore this application of the ergot, he so earnestly concurred in the propriety of the measure, that he at once expressed his determination to give it a trial in the first case of uterine hæmorrhage of this nature that may fall under his care.

Another circumstance occurs to me as favourable to this application of the ergot: that the attachment of the ovum to the orifice, or neck of the womb, never takes places but in those women who have borne many children—in other words, in those cases only where the cavity of the uterus has become enlarged by frequent pregnancies, and consequently accompanied by a correspondent enlargement of the uterine vessels and a propensity to hæmorrhage. In cases of this nature I believe the ergot will prove a valuable resource.

I am, dear sir, with sentiments of great respect,
Your obliged friend and pupil,
DAVID HOSACK.

JAMES HAMILTON, JUN. M. D. F. R. S. E. &c. &c.

Puerperal Fever.

To the excellent observations of Dr. Thomas on this subject, I shall only add, that puerperal fever ought to be divided into the idiopathic and symptomatic kinds: in the former we may observe the characteristics of an active and pure inflammatory disorder, while in the latter are to be seen those of a typhoid affection, This typhoid state is to be considered as depending upon a peculiar condition of the system, and previous exposure to the sources of typhus fever. In this case, puerperal fever is not unfrequently highly contagious. These two forms of the disease evidently call for different, and sometimes opposite modes of treatment.

Phlegmasia Dolens.

The inflammatory nature of this disease, after the view taken of it by Dr. Hull, and the late Dr. Ferriar of Manchester, seems to me hardly

questionable. It may, and frequently does, arise from causes similar to those which produce inflammation, and of these causes *cold* may be considered as the most frequent.—I have recently had under my care a formidable case of this disease, induced by the injudicious use of ardent drink prescribed immediately after delivery. This complaint sometimes occurs independently of paturition; and where it attends the puerperal state, I have known it to take place many days after the lochial evacuation had totally ceased:—the uterine discharge therefore in those instances, could have had no agency in the production of the disorder as supposed by Dr. Trye and Dr. Denman; but the fact that phlegmasia dolens never arises from the offensive discharges of the womb that take place in the numerous diseases with which that organ is affected, affords an abundant refutation of that doctrine. The comparatively rare occurrence of this disease, even after parturition, is opposed to that view of the subject. Dr. Francis witnessed a striking case of phlegmasia dolens, occurring in a male subject, aged about twenty-two years. In this instance the disease succeeded to a long continued typhus.

In the treatment of phlegmasia dolens, regard must be had to the stage of the disease: during the inflammatory or first stage those means should be employed which are calculated for the removal of general and local excitement, viz. blood-letting, saline cathartics, nauseating doses of antimony or ipecacuanha—and the use of tepid vinegar and water as a fomentation to the limb: in some cases blisters to the parts most affected have been found serviceable.

In the second stage of the disease, when the febrile and inflammatory symptoms have subsided, great advantage has been obtained from small doses of calomel and squills, while stimulating liniments, friction and the flannel roller, are among the most beneficial applications to be made to the part.

In the first stage of the disease, the diet should be strictly antiphlogistic—in the last the moderate use of wine, and the more stimulating nourishments may be administered, proportioned to the degree of debility induced.

I have never known phlegmasia dolens to terminate fatally, nor in my opinion is it likely to do so, or even to leave any permanent disease of the limb, where active depletion is employed in the commencement of the complaint before an effusion has taken place in the cellular membrane.

I subjoin the following memoranda which I have made of the cases which have fallen under my care since 1791, when I commenced the practice of medicine.

In the *first* case, it occurred under the ordinary circumstances in which this disease appears, viz. a few days after delivery, and before the disappearance of the lochia. It was treated by cathartics, dilution, liniments, fomentations, but without any view to its general inflammatory character: it was of six weeks duration, but ended without any permanent injury to the constitution, or to the affected limb.

The *second* case that fell under my notice also appeared soon after parturition, and during the flow of the lochia. Viewing the effusion in the limb as bearing some resemblance to dropsy, I had recourse, after prescribing an active cathartic, to a combination of calomel and squills, one grain of each administered three times a day. This prescription

was attended with a manifestly favourable result, removing the disease in a few days.

In a *third* case, occurring under similar circumstances, the disease, after being confined to one limb for several days, appeared in the other, but was removed from both by the cathartic and diuretic operation of the calomel and squills.

The *fourth* case that offered, gave me a much more enlarged view of the nature of this complaint. The lady who was the subject of it had been confined twenty-three days at the time of her attack; the lochia had also entirely disappeared ten or twelve days; she had undergone a severe labour, having borne twins, and during her pregnancy experienced much inconvenience from her inordinate size.

She was first affected by cold producing catarrhal and pneumonic inflammation; but within forty-eight hours a metastasis took place to the limb, which proceeded to swell with all the symptoms of idiopathic diseases; the affection of the lungs totally disappearing. By general bloodletting, saline cathartics, antimonials, tepid applications to the part affected, with a strict antiphlogistic diet and regimen, the first stage of the disease was in a few days removed; afterwards, by stimulating liniments, friction, and the application of a flannel roller, the parts affected were restored.

A *fifth* case presented itself in the course of the last winter. In this lady it was induced by the excitement arising from the imprudent use of wine recommended by the practitioner who delivered her; her labour had been of short duration, and in all respects natural. By the antiphlogistic treatment this case also ended favourably in a few days.

Sixth. A lady who had been many years since affected by rheumatism in the left limb, after her confinement in which I attended her, was attacked with phlegmasia dolens, affecting the same limb that before had been the seat of suffering; her labour was a natural one. In this case her disease was the affect of cold, induced by an imprudent change of dress. When the limb was first affected, she considered it as a renewal of her former attack of rheumatism, which before had been altogether unconnected with parturition. In a few days it yielded to the same treatment I have above inculcated, and which I have more fully detailed in my observations on this subject, contained in my notes subjoined to the article *Medicine* in the American edition of Brewster's Edinburgh Encyclopædia.

Seventh. I precribe for a lady, the mother of a large family of children, who has suffered four attacks of this disease after parturition. The complaint in every instance took place within nine days after delivery, commencing with pain in the calf of the leg. It always affected the same limb, and has left the ankle permanently thickened, enlarged, and painful under ordinary pressure.

Eighth. In December, 1820, my son Alexander E. Hosack, M. D. who was then engaged in the study of medicine, delivered a poor woman, in whom the disease appeared as early as the second day after delivery, In this case the inflammation and swelling took place in both limbs simultaneously. The labour had been natural, and of short duration. The woman was of plethoric habit, insomuch that delirium took place in the latter stage of her labour. The patient was situated in a cold uncomfortable apartment, which exposure was considered as the exciting cause of her disease. This case also yielded to the lancet, and other means of depletion.

Ninth. During my tour of duty in the winter of 1821 and 1822, at the New York Hospital, a very similar painful enlargement of the limb occurred in a man who had been admitted as a fever patient. In a few days the left leg and thigh became the seat of inflammation, attended with a swelling of the whole limb, exhibiting the remarkably glossy whiteness and œdematous appearance that characterize this disease in the female, and attended with similar pain and sensibility to the slightest movement. The patient had been so much reduced and emaciated by the preceding fever and the means prescribed, that upon the appearance of this local affection, the usual evacuations by the lancet were in his case altogether inadmissible. The only remedies employed were such as were calculated to allay the sufferings of the limb, and to moderate the general febrile action of the system. It ended in an extensive suppuration in the thigh, followed by hectic fever, and ultimately proved fatal.

From the foregoing cases the following inferences may be deduced :—

1st. That phlegmasia dolens is an inflammatory disease, not only affecting the limb, but the whole system.

2d. That it most usually proceeds from a suppression of the natural excretions, the effect of cold, stimulating drinks, and other means of excitement.

3d. That it is not necessarily connected with the lochial discharge, as inculcated by Trye, Denman, and indeed by Rodriges Decastro of Hamburgh in 1603, by Wiseman in 1676, and by Mauriceau in 1712, and by Mesnard in 1743, who were the authors of this doctrine.

4th. That the first irritations frequently appear about the calf of the leg, and not so generally in the groins and pelvis, as asserted by Dr. Denman and others who consider the disease as having its origin in an obstruction of the glands within the pelvis.‡

5th. That it follows easy as well as difficult labours, and therefore cannot proceed from the pressure of the child's head upon the edge of the pelvis rupturing the lymphatics, as supposed by Mr. White.

6th. That it is not a disease confined to the lymphatics, but as in the cases recorded by Dr. Hull, it appears in every part of the affected limb.

7th. That it is not confined to females, but, as in the cases recorded by Dr. Hull, Dr. Ferriar, Dr. Thomas, and others, it occasionally appears in males.*

8th. That as in gout and rheumatism, when depletion is not actively employed, the inflammation, after appearing in one limb, is in some cases transfered to another.

9th. That it sometimes appears in both limbs at the same time.

10th. That the general means of subduing inflammatory action are the most effectual in removing the *active* stage of this complaint.

11th. That in the second stage, in addition to the use of general stimuli and tonics, stimulating spirituous liniments, friction, and the roller, are most useful in restoring the circulation, and in exciting the absorbents in the removal of the swelling which remains in the passive stage of this disease.

12th. That occasionally as in the cases related by Hull, Denman, and by Zinn,† it ends in abscess, and proves fatal, especially where the anti-

* See Medical and Chirurgical Journal for 1817. Medical and Chirurgical Transactions for 1819.

† See the Commentaries of the Royal Society of Sciences at Gottigen, vol. 2.

‡ See Editor's Essays, vol. 2. p. 223.

phlogistic treatment has not been vigorously pursued in the first stage of the disease, or when it occurs under great exhaustion and debility of constitution.

A very interesting essay on phlegmasia dolens has lately appeared in the twelfth volume of the Medico-Chirurgical Transactions of London, by David D. Davis, M D., accompanied with three plates illustrative of the inflammation, which in that disease affects the veins within and in the immediate neighbourhood of the pelvis. In the developement of the facts adduced by the author, he remarks, "that it is his object to prove, or at least attempt to prove, that the proximate cause of the disease called phlegmasia dolens, is a violent inflammation of one or more of the principal veins, within and in the immediate neigbourhood of the pelvis, producing an increased thickness of their coats, the formation of false membranes on their internal surface, a gradual coagulation of their contents, and occasionally a destructive suppuration of their whole texture; in consequence of which, the diameters of the cavities of these important vessels become so greatly diminished, sometimes so totally obstructed as to be rendered mechanically incompetent to carry forward into their corresponding trunks, the venous blood brought to them by their inferior contributory branches."

He then proceeds to state to the society, the results of his opportunities for ascertaining the morbid changes so produced, and relates four cases wherein the disease terminated fatally, with the appearances found upon dissection. He notices not only the general disease which pervades the affected limb, as it regards enlargement, anasarcous effusion, glandular obstruction, the state of the lymphatics, and examines the condition of the uterus, and of the abdominal cavity; but more particularly directs his attention to the state of the veins of the extremity affected. In this part of his research, which is conducted with great anatomical accuracy, aided too in the first case by his able and learned friend Mr. Lawrence, he observes, "that the femoral vein, from the ham upwards, the external iliac, and the common iliac veins as far as the junction of the latter with the corresponding trunk of the right side, were distended and firmly plugged with what appeared externally, a coagulum of blood. The femoral portion of the vein, slightly thickened in its coats, and of a deep red colour, was filled with a firm bloody coagulum adhering to the sides of the tube, so that it could not be drawn out.

"The trunk of the profunda was distended in the same way as that of the femoral vein; the substance filling the external iliac and common iliac portions of the vein, was like the laminated coagulum of an aneurismal sac." He adds, that the uterus and its appendages, the abdominal cavity and its contents, were in a perfectly natural state.

In the second case, Dr. Davis remarks, "that the left external iliac vein, including about half an inch of the upper portion of its corresponding femoral vein, was found strongly attached by adhesions of its cellular coat, to the parts forming its natural bed. Its parietes still retained a morbid thickness, and its internal tunic was studded in several places with deposites of adherent lymph. The tube of the vessel was still manifestly pervious, though it had suffered a diminution of capacity, amounting to perhaps one half of its natural diameter." The uterus and its appendages, with all the pelvic viscera were also in this case, natural and healthy.

"In the third case the lower extremity became the seat of disease the

thirtieth day after delivery: it terminated fatally on the thirty-fourth day. "On examining the swollen limb the day after her death," the writer observes, "I found the femoral vein, one-third down the thigh, and all the iliac veins, much enlarged, and containing adherent layers of coagulated blood, similar to that found in aneurismal sacs, together with a sort of grumous fluid of a brown colour, more or less mixed with air, and almost obliterating the venous canals. The same appearances, but in a much less degree, extended along the cava as far as the entrance of the renal veins. The coats of the veins were highly inflamed, and intimately attached to the surrounding parts. The absorbent vessels and glands were slightly enlarged as high as the lumbar regions, but not otherwise affected. The uterus had regained nearly its natural size."

The fourth case commenced the seventh day after delivery, with a violent rigor, succeeded by fever, and a pain in the left side of the chest: in the evening of the same day, unequivocal symptoms of phlegmasia dolens declared themselves. The patient died on the fourteenth day of her disease. Upon dissection "the pleura costalis of the left thoracic cavity was found slightly inflamed, and lined in two or three places with a delicate tunic of lymph. There was also an effusion of about six ounces of a nearly transparent serosity into the cavity itself. The lung of the same side was of a dark red hue."

"The left lower extremity from the hip to the toe was considerably but not greatly enlarged, and there was an evident fulness of the labium pudendi of the same side. The iliac veins of both sides were unusually turgid with blood; but presenting no other external manifestations of disease. They were entirely free from attachments to the contiguous parts. The inguinal glands were certainly not diseased, nor even visibly enlarged. On making a careful incision into the left external iliac, it was found to contain a coagulum of blood of firm consistence; but not at that part adherent to the internal surface of the vein. Upon examining however, the common iliac portion of the vessel, adhesion of the same column of coagulum had obviously taken place. The left internal iliac was greatly inflamed, and its diameter was so much contracted by the morbid thickening of its parietes, that it was rendered almost impervious. The right iliac vein, including both its common and external portions, was distended with a similar coagulum; or rather the same column of coagulum was prolonged over the angle of their common junction with the vena cava from one iliac to the other. In this interesting fact of the dissection, we cannot fail to recognise, had the poor patient's life been preserved, the materials in actual preparation for a similar affection of the right limb."

Such are the facts adduced by Dr. Davis: but while it is acknowledged, that in this communication the author has made large and valuable contributions to the stock of knowledge, collected upon this interesting subject; the question now arises, how far do the facts he has disclosed warrant the inferences he has deduced from them? How far is the conclusion a legitimate one, that because the femoral and iliac veins partake of the derangement affecting almost every part of the limb, that they are necessarily the primary seat and source of the disease; and that the proximate cause, exclusively consists in an inflammation and obstruction of those vessels in particular? With due respect to Dr. Davis, I must be permitted to apply to his reasoning the same observation he has made, with regard to the dissection made by Zinn, and the inferences deduced

from it by that author. "In an analysis of this dissection," says Dr. Davis, "it is important to distinguish between the facts that are reported, and the opinion of the writer, as to the order of their relation to each other as cause and effect. In admitting, therefore, the fact of a diminution of diameter in the vein, we are by no means bound by the author's opinion as to the cause." In like manner I observe, that the inferences, deduced by Dr. Davis from the dissection demonstrating the presence of inflammation in the principal veins of the thigh and pelvis, are altogether gratuitous, and to be received as a matter purely of opinion. And upon a careful examination of the general observations which the Doctor has added, in application of the facts which his dissections have developed, to the phenomena of the disease, I have not been enabled to discover a single argument to show that it commences in the particular vessels thus affected; on the contrary, many circumstances are stated which manifestly lead to an opposite conclusion.

That great sensibility exists in the uterus, and the organs in its vicinity, after parturition, must certainly be admitted by all conversant with the diseases of the lying-in room; but it is surely a non sequitur, that the inflammation of the limb thence arises from the vitiated lochial discharges, as urged by Dr. Denman and others; it is still more illogical to infer that those sensibilities which appear in the pelvic viscera, are attributable to the iliac and femoral veins. But in many instances recorded by writers, as well as in the cases related in the preceding paper, and indeed in one of the four cases related by Dr. Davis himself, the pain first complained of, was felt in the calf of the leg, or some other inferior part of the affected extremity; and in males these sensibilities about the pelvis have been wanting altogether. Dr. Davis remarks, that it is a part of the history of phlegmasia dolens, that it is seldom known to attack the same extremity more than once. The cases I have referred to in the preceding communication, are at variance with this observation: indeed Dr. Davis adds from his own experience in several cases, and those of unquestionable authenticity recorded by others, that there are occasional exceptions to this rule; nevertheless he proceeds to account for what he supposes to be the general truth, by observing, "that the entire system of great veins within the pelvis is, in such cases, totally obstructed by the disease, converted into ligamentous structure, and therefore rendered unsusceptible of a similar disease in future." If such obstruction and derangement of the organization and functions of these veins constituted the proximate cause of the disease, the numerous exceptions he has admitted could never have occurred; but the general fact is well known to be otherwise, and the limb once affected, analogous to what takes place in gout and rheumatism, is rendered more liable to a renewal of the inflammation.*

I again beg leave to differ from Dr. Davis, as to another circumstance which he has stated as a fact, and the conclusion he has deduced from it, supposing it to be true. That after an extremity shall have been once thoroughly affected by the disease, the circulation would have to be carried on in future by the establishment of an extensive system of anastomosis: and that this must be an inevitable consequence if his view of the proximate cause be the true one. Accordingly he adds, "I take upon myself to assert, that in a very large proportion of cases, which

* See also Dr. Francis's observations on phlegmasia dolens in the New York Med. and Phys. Journal, vol. I.

by the favour of many friends I have had opportunities of examining, have had the satisfaction of observing that important confirmatory result The superficial veins, sometimes the very finest cutaneous veins, are to be seen in many such cases much enlarged, and clustering together into extensive varices, increasing proportionally in dimension as they ascend high on the limb, to ramify in still bolder paintings on the hips and abdominal regions."

But, he adds, "I must acknowledge that these appearances, though to be easily recognised in a great majority of cases, have not invariably presented themselves."

That the blood vessels of a limb, when it has undergone inflammation, as in gout or rheumatism, should remain to a certain extent enlarged, for some time after the disease has disappeared, is certainly an event to be looked for, and is frequently met with. But if the doctrine advanced by Dr. Davis be the true one, a varicose enlargement, a dropsy of the limb affected, and an organic derangement analogous to elephantiasis, must in all cases be the inevitable result—how stands the fact? of the cases I have recorded in the preceding paper, all recovered the perfect use of the limb, free from any permanent disease, or varicose state of the blood vessels; the seventh case only excepted, in which the ankle remained permanently thickened, enlarged, and painful under ordinary pressure; and these, it should be remembered, were the effects of four attacks of the disease. But the Doctor himself acknowledges, that the enlargement of the cutaneous veins he has described, have not invariably presented themselves: the inference therefore is irresistible, that the obstruction he contends for, the coagula filling up and adhering to the iliac and femoral veins, which he has found to be the result where the inflammation of the limb has been so violent as to terminate fatally, cannot have existed as the proximate cause of the disease, in the cases that recovered. Until therefore Dr Davis shall adduce less equivocal evidence, to show that the primary seat of phlegmasia dolens consists in a violent and destructive inflammation of the iliac veins and their contributing branches, the more general views taken of this disease, tracing it to an inflammation of the limb, involving all its parts, muscles, cellular membrane, cutis, lymphatics, glands, nerves, and blood vessels, will probably be retained as more conformable to the analogous affections of the lower extremities, which take place in gout and rheumatism, and as occurring, under the peculiar predisposition derived from pregnancy, and the operation of those exciting causes to which the female after parturition is peculiarly liable; especially the suppression of the natural excretions occasioned by cold, stimulating drinks, and other means of excitement.

The success, too, which has generally followed the antiphlogistic treatment, where it has been vigorously pursued in the first stage of the disease, is also favourable to this view of the pathology of phlegmasia dolens.

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