

Dr. Underwood's treatise on the diseases of children : with directions for the management of infants.

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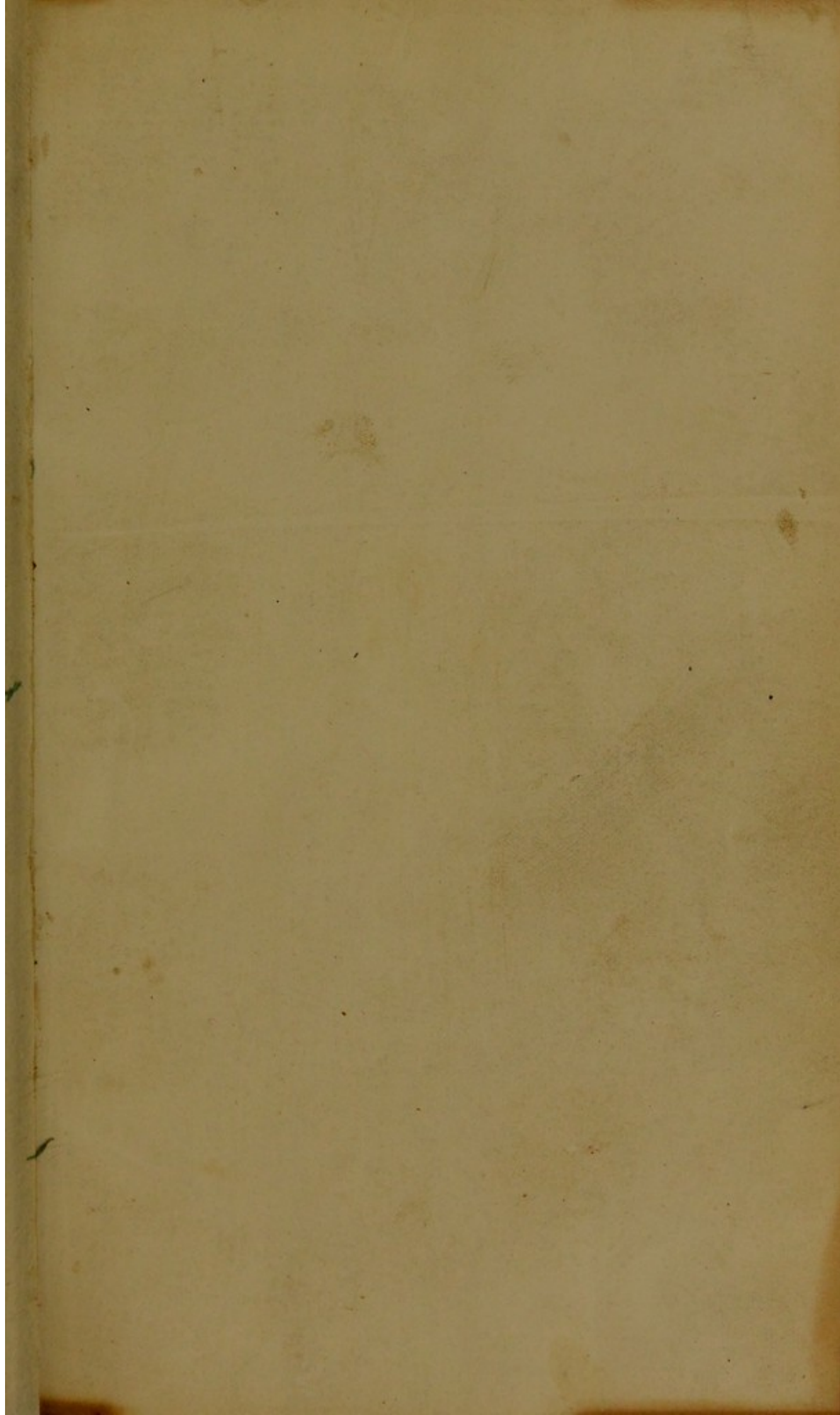


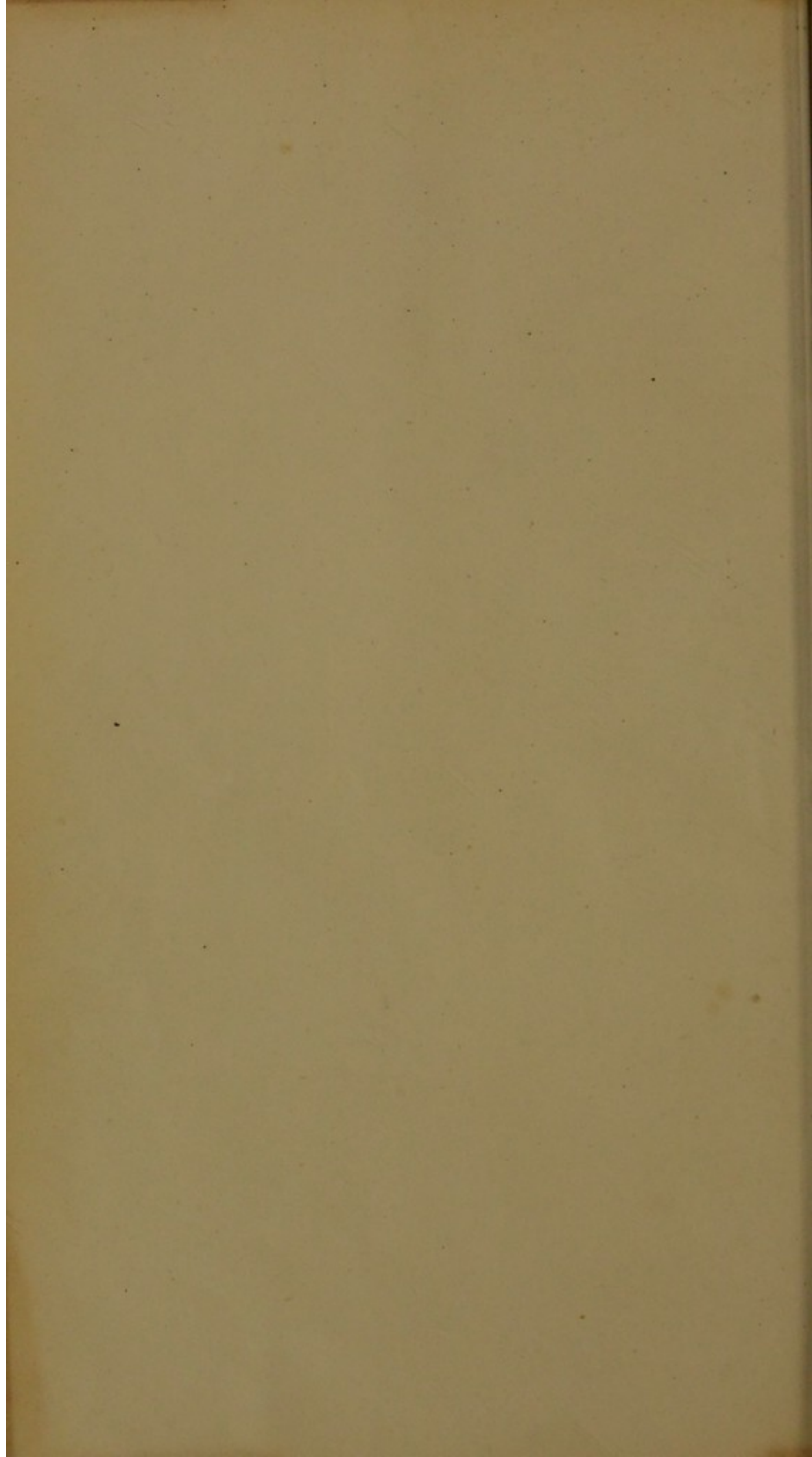
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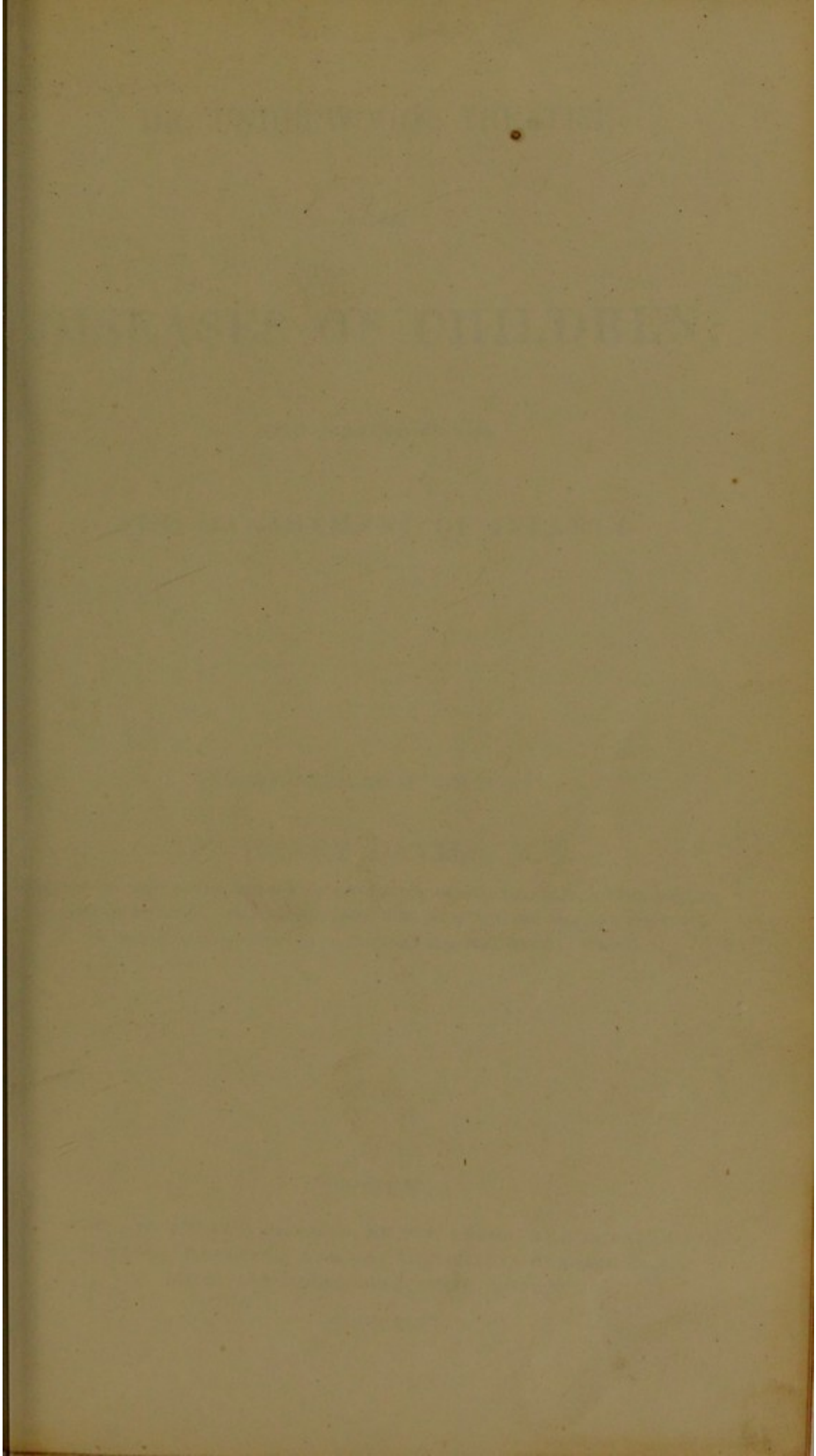


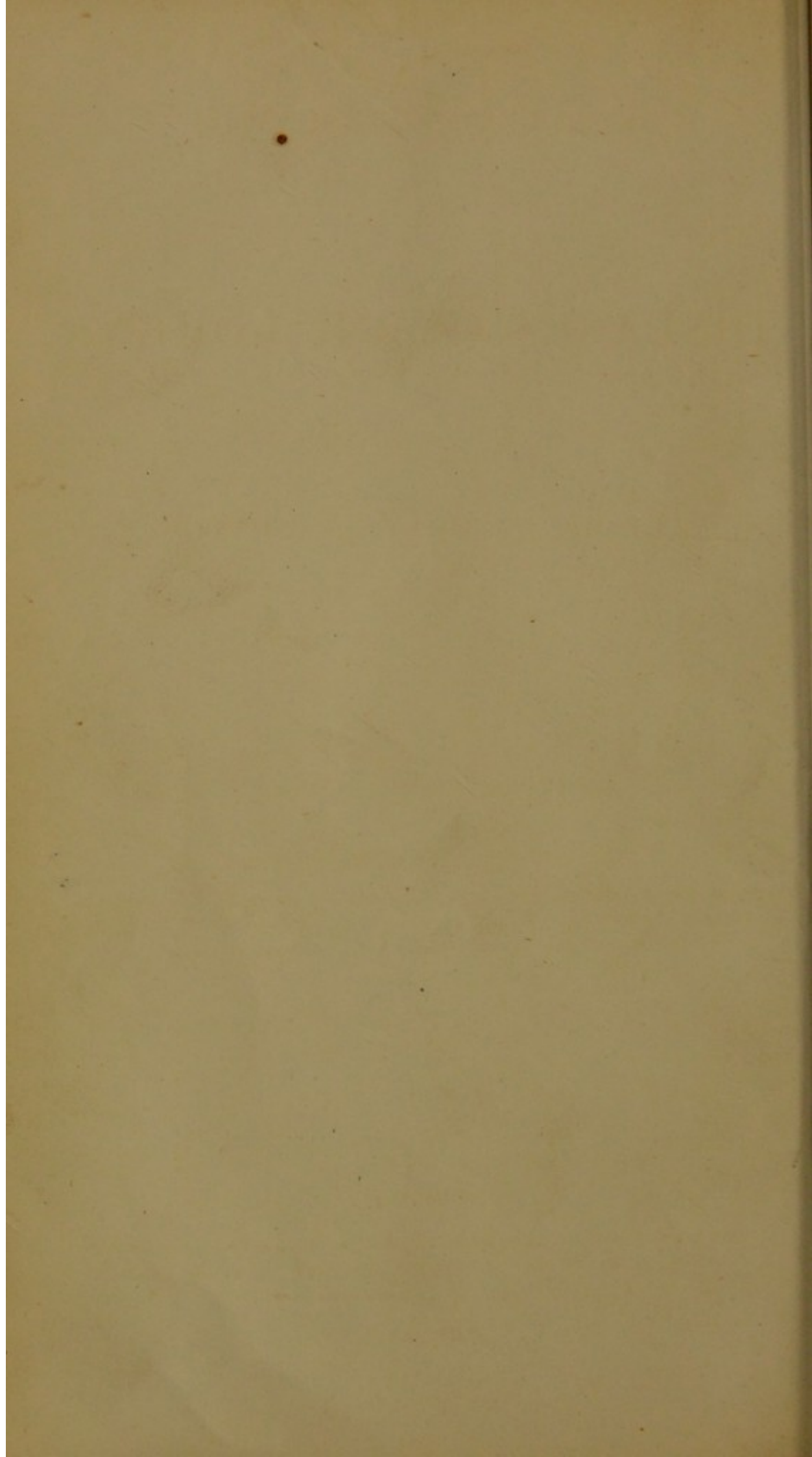
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DR. UNDERWOOD'S TREATISE
ON THE
DISEASES OF CHILDREN;

WITH DIRECTIONS FOR

THE MANAGEMENT OF INFANTS.

BLIOT
E.L. REG.
ED. EDV

TENTH EDITION, WITH ADDITIONS,

BY HENRY DAVIES, M.D.

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LYING-IN HOSPITAL, AND FORMERLY LECTURER ON MIDWIFERY AND THE DISEASES
OF WOMEN AND CHILDREN IN ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.

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MDCCCXLVI.

DR. F. J. PALMER'S

THE

DISEASES OF CHILDREN:

WITH

THE MANAGEMENT OF INFANTS

AND

THE

CHILD

AND THE

DR. F. J. PALMER, M.D.

OF THE UNIVERSITY OF CHICAGO, AND OF THE
HARVARD MEDICAL SCHOOL, AND OF THE
HOSPITAL FOR INFANTS, AND OF THE
HOSPITAL FOR CHILDREN, AND OF THE
HOSPITAL FOR THE DEAF AND BLIND, AND OF THE
HOSPITAL FOR THE INSANE, AND OF THE
HOSPITAL FOR THE LUNATIC, AND OF THE
HOSPITAL FOR THE SICK, AND OF THE
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HOSPITAL FOR THE WOUNDED, AND OF THE

LONDON:

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ADVERTISEMENT.

The Editor has endeavoured to render this edition of Dr. Underwood's Treatise on the Diseases of Children worthy of the reputation which the work has heretofore sustained, by bringing up the original doctrines to the standard of those of the present day, and by the addition of much new matter. He has generally deemed it advisable to adhere to Dr. Underwood's arrangement, and for the most part, also, to retain his language and opinions, remarking, however, on the latter, wherever it seemed expedient. At the request of the publishers, he has embodied Dr. Underwood's notes in the text, as also those of Dr. Merriman, and Dr. Marshall Hall, wherever they could well be admitted. The annotations of the two latter writers he has distinguished by their respective initials; a form which he has sometimes omitted with regard to his own, from a wish to avoid confusion. This explanation, he trusts, will account for the varieties of style and language, as well as for some incongruities especially relative to the use of pronouns, many of which it was scarcely possible to avoid, without writing a new work. On the whole, the Editor hopes that the work, as it now stands, will be found by the profession an improvement upon former editions, and a good practical treatise.

18, *Savile Row, Burlington Gardens.*

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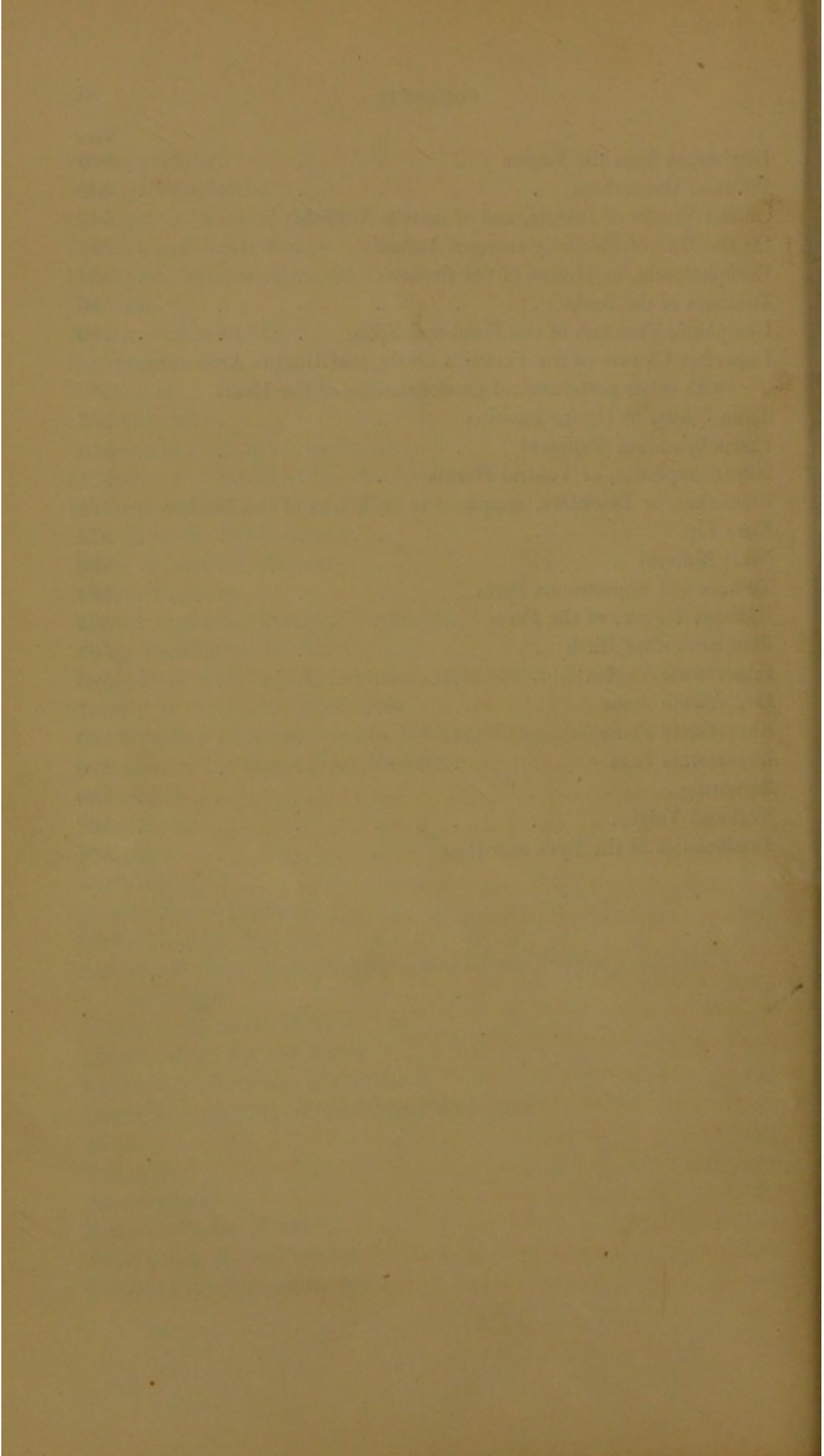
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A TREATISE
ON THE
DISEASES OF CHILDREN.

PRELIMINARY OBSERVATIONS.

THE successful rearing of every living being depends for the most part on the proper adaptation of its treatment to the laws of its constitution : where these are in accordance, the failures will be few and unimportant, arising chiefly from those unfavourable accidents to which all organized creatures are, and will continue to be, more or less subjected. But where the treatment and laws are not in accordance, failure, disease, and untimely death may be expected as the more frequent results.

To be enabled to treat appropriately the diseases of children, a competent knowledge should be acquired of their general and peculiar habits, appearances, and manners ; or, in other words, of the nature of the infant economy.

Some difference of opinion appears to exist as to the definition of infancy and childhood. Without entering into a controversy on the subject, and influenced by what nature herself appears to point out, we shall consider infancy as beginning at the period of birth, and terminating at the end of the first year, or period of lactation ; and childhood as beginning with the second year, and terminating with the eighth ; and the

term girl, or boy, as applicable from the end of the eighth year to the period of puberty.

The infant at birth possesses the same organs as the adult, but presenting for the most part such differences in structure, and development, and in some measure, of situation, as to constitute essential, or peculiar characters.

Infancy, as the period of organic growth and development, is characterised by remarkable activity of the functions of assimilation, as well as by extreme mobility of the sentient system; the skin is of a florid colour, soft, and delicate, exceedingly sensible to external impressions, indicating the predominance in size and activity of the vascular and nervous over the other systems. From the same natural causes also proceed the velocity of the blood's motion, denoted by the frequency of the pulse which is peculiar to the infantile state. The frequency of the arterial pulsations is nearly double that which obtains in the adult, varying, during the first month, from 120 to 130 beats in a minute—more frequently the former number; the number of respirations are frequent in proportion, varying from 30 to 40, the inspirations and expirations being equal. The capillary circulation is extremely active, the processes of interstitial growth most vigorous, the secretions are abundant, and the excretions frequent; which phenomena depend not merely on the abundance of blood, but on the preponderance of the arterial over the venous vessels. The infant, from being pre-eminently endowed with nervous power, is extremely apt to be affected with uneasiness or pain by the slightest external causes; hence few or none of its diseases are unaccompanied by nervous excitement. When any re-action takes place in the system it is most powerful and sudden, according with the general mobility. The senses of sight, hearing, smell, and taste, all participate in the general susceptibility of impression, and care is requisite to prevent the inordinate application of the stimuli appropriate to each.

The intense activity of the vascular and nervous systems in infancy might naturally be supposed to give rise to sudden vicissitudes in the state of the vital powers; and such, accordingly, we find to be the fact; for an infant will frequently re-

cover from disease under circumstances which in the adult would be hopeless, while, at other times, it will sink under causes apparently trivial.

In the following treatise on the diseases of children, the work of the late Dr. Michael Underwood has been made the text-book, and in the attempt to bring it up to the present level of medical knowledge, such additions as have been thought necessary have been embodied as much as possible with the original text, with which also the notes of Dr. Merriman and Dr. Marshall Hall have been incorporated.

The editor feels bound to acknowledge himself deeply indebted to the labours of his cotemporaries, of whose researches and observations he has made free use. At the same time, in order to keep the volume within reasonable limits, he has avoided the introduction of marginal notes and particular references. The works chiefly consulted have been those of Dr. Ayres, Dr. Bateman, Dr. Risdon Bennett, Dr. Clarke, Mr. Coombe, Mr. S. Cooper, Dr. Joy, Mr. Kennedy, Dr. R. Lee, Dr. Ley, Dr. Marley, Dr. Marshall Hall, Messrs. Maunsell and Evanson, Mr. North, Dr. Paris, Dr. Pereira, Mr. Toogood, Dr. Tweedie, Dr. Ure, Dr. Watson, Dr. West; the British and Foreign Medical Review, the Encyclopædia of Practical Medicine, the Lancet, the Medical Gazette, and the Medical and Physical Journal.

In the conduct and production of the work he has received the assistance of the late Dr. Domeier, Dr. Klein Grant, and Dr. Sayer.

CHAPTER I.

ON INFANTS APPARENTLY STILL-BORN.

THE present exordium is dedicated to the consideration of the state of apparently still-born children, and intended to point out the most likely means of their animation. And what I have here to offer is the result of an experience that has been attended with more success than might have been expected; at least from any thing recorded by preceding writers.

I have, indeed, both at the Lying-in-Hospital, and elsewhere, met with many instances of children born with very little, and others without even the smallest appearance of life; some of whom have remained entirely destitute of any sign of it, for more than a quarter of an hour, and yet have been happily restored. I pretend to little or no skill in this business, not generally practised, and can scarcely guess to what to attribute this success, unless it be an unwearied assiduity and perseverance in my attempts, whenever there are no certain signs of death, till I conceive nothing is possibly to be expected from them. And this has so often succeeded, that I have been tempted to think its importance may not have been sufficiently attended to by every practitioner. I rest this presumption not only upon some fortunate events where I have had little or no previous ground for hope, but where other practitioners had, in some instances, abandoned it. A certain steady perseverance in our attempts to preserve life, as long as the hope may remain, is indeed not only a duty we owe to the public, but one successful attempt is an abundant recompence for many failures; especially as I imagine we shall rarely fail when there is the least positive ground for hope of a favourable issue.

As to the means, they consist only of warmth, clysters, stimulants, and especially, blowing forcibly into the trachea.

The ordinary stimulants are the smoke of lighted brown paper, or tobacco; juice of onions; frictions with hot cloths, and with brandy; cold brandy poured on the thorax, and on the funis umbilicalis, where it is inserted into the belly; striking the nates, and the soles of the feet; or irritating them by rubbing with a tooth or hair-brush; stimulating the nose and pharynx with a feather, (drawing out the mucus that may be present;) with other similar means calculated to excite a strong effort, especially that of crying; to which, and a consequent free respiration, our attempts ultimately tend. On this account, no benefit is to be expected from stroking the blood along the funis, or immersing the placenta in warm water; the foetal life being extinct, the recovery of the child will depend on the blood passing freely through the lungs, which it cannot do till the child is brought to breathe freely and forcibly; the continuance of which also is never secure till it begins to cry. To these ends, I have depended above all upon blowing into the trachea, through the mouth; which I am satisfied may be more effectually done by the mouth of the assistant being placed immediately upon the child's, than by means of a blow-pipe; although the air is certainly less pure; at the same time preventing the return of the air before it has entered the lungs, by the fingers of one hand placed at the angles of the mouth, and those of the other at each side of the nose. Perhaps the warmth imparted to the lungs of the infant by the breath of the operator, may be the means of rendering the vitiated air thus thrown in, more efficacious than the more pure, but colder atmospheric air would prove. The objection frequently made, that it must be wrong to breathe into the lungs of a still-born infant from the mouth of the attendant, because the air is contaminated, is certainly shown by experience to be invalid. But I have sometimes imagined that I might attribute much of my success not only to the continuance of this, but to the manner of doing it: for I attempted to imitate natural respiration, by forcing out the air I had thrown in, by a strong pressure against the pit of the stomach; thus alternately blowing in, and pressing out the air, for a long time together, omitting it only now and then, to make use of some of the above-mentioned means.

I believe, however, that these means can do but very little to insure the life of the child, until it begins not only to gasp, and that with shorter intervals, but also to breathe in a somewhat uniform manner. At this time, should the child not be disposed to cry, which is frequently the case, nothing seems so likely to succeed as brandy and water, or other very stimulating clyster; or putting a little Scotch snuff, or other pungent powder, up the nose; the latter, if they induce sneezing, will soon be followed by a strong cry, and the child be with certainty restored.

Amongst other means, that of warmth is very essential, to which end, the infant should be entirely covered with very hot cloths, which should be renewed as fast as they become at all cool; or the body may be immersed in a tepid bath, and be well rubbed over: the cord may be suffered to bleed a little, especially if the face or body do not soon acquire the natural colour—but this ought seldom to be done; and is not advisable except in that particular case of incomplete animation, where from long continued, or very great sudden pressure, the face and head are tumid, dark coloured, and overloaded with blood; where the pulsation in the funis is heavy and oppressed; and the heart is labouring to maintain the circulation. Under these circumstances, to let the funis bleed to the extent of two or three table spoonfuls, is good practice; otherwise it is not expedient to divide the funis, as long as the circulation between the child and the placenta continues.

To these means may be added the cautious use of electricity, which appears as likely to be as successful in these, as in most other cases to which it has been applied, but I have never been in a situation to make trial of it in time, or I certainly should; as I once knew a child happily recovered by it, after being laid out for dead for nearly two hours, in consequence of a fall from a two pair of stairs window.

The very great success of the means recommended by the Humane Society, in restoring life to drowned persons, after two or more hours have elapsed, may be advanced as a further inducement to steady perseverance in the plan proposed. For if an infant be not born positively dead, it is well known that the

vital spark, though long dormant, may be roused into action: and the living principle, if respiration be promoted, will extend and maintain its influence through the animal frame.

But should these several means fail, as a last resource, a very different kind of stimulant may be tried, and instead of laying the infant aside in a warm flannel, it should be exposed to sudden and severe cold; which, I remember in one case succeeded, after the life of the child had been entirely despaired of. Mr. Herbolt, of Copenhagen, has conceived that many infants perish from the trachea being filled with water; and that infants in these circumstances might in general be saved, by placing them in such a position, that the water should run out. Before any attempt is made to expand the lungs of a child by breathing into them, whatever mucus or fluids may be in the mouth or fauces should be removed. This may be effected by passing the little finger, covered with the fold of a handkerchief or soft napkin, into the mouth, and wiping away what may be there collected. This should be repeated occasionally, as fresh mucus may accumulate, after the lungs have been made to expand and respire.

I shall just add, that, amongst other symptoms supposed to prove that the child may have sustained irretrievable injury in the birth, is that of a discoloured and often fetid, or bloody water being forced out of the nose, after the lungs have been two or three times artificially inflated. Under these circumstances, however, I have succeeded in two or three instances so far as to animate children sufficiently both to breathe and to cry; though they afterwards lay in a moaning state for four or five hours, and then expired. To succeed thus far, indeed, if I am rightly informed, may prove of importance, where the course of a family estate may be pending on a living child. I have, however, been fortunate enough to succeed more completely under the most unfavourable circumstances, and, in one instance, after a great quantity of discoloured mucus, and something like meconium, had been forced up both from the throat and nose, restored an unusually large child to life.

The above scrupulous attention is not designed to be incul-

cated in every instance of a still-born infant; but experience warrants us in recommending the attempt to restore all who have been alive during the labour.

In every instance also where we have not positive proof of the child being dead, in the existence of putrefaction, or such malformation as is incompatible with life, we should make the attempt, and there are several circumstances of which we are informed by reason and experience, the consideration of which encourages us strenuously to persevere in our efforts; for it appears:—1. That where respiration has been suspended and an animal appeared to be dying, the heat of the heart and signs of life were speedily restored on performing artificial respiration. 2. That the less heat an animal produces, the longer it can exist under a condition of asphyxia. 3. The heat of a new-born infant is three degrees less than that of an adult, and hence we have an explanation of what experience proves, that it can exist longer without respiration. The great tenacity of life at this time is extraordinary. We have frequently known infants put on one side for dead, who have afterwards been resuscitated.

Mr. Toogood, of Manchester, who relies for the most part on regular inflation of the lungs, relates a very instructive case which will serve to illustrate this point:—"It was a case of twins, and the second child presented the head, before which a considerable portion of the funis had descended. The delivery was extremely slow from the weakness of the woman, who had been for a long time in a bad state of health, and the child was born apparently quite dead. As the mother's situation was extremely critical, more than half an hour had elapsed before I could attend to the child; and on inquiry, I found it had been wrapped in a cloth, and placed on a chair in another room. I immediately made the attempt to restore it by gently inflating the lungs, and, by persevering steadily for twenty-five minutes, I had the satisfaction to see symptoms of returning life, and in about fifteen minutes more the child breathed freely."

The great importance of the subject, it is hoped, will be a sufficient apology with most readers for the length of these direc-

tions. We feel emboldened to say, that if the means of resuscitation recommended be actively employed and strenuously persevered in, we shall, in the majority of instances, be successful. In all cases the restoration of a child to life is a most gratifying circumstance, and in some instances of the greatest possible consequence.

As a general summary of the means to be pursued in the resuscitation of still-born infants, it may be premised, that when a labour is long protracted, or either manual or instrumental assistance has been required, it will be advisable that *cold* and hot water and ammonia be at hand. The infant may be still-born from feebleness, and unable to make the necessary exertion for the commencement of respiration, or from its rapid delivery, when it will be pale, with open and placid mouth and relaxed limbs; from compressed brain, or probably from its engorgement, in consequence of the funis being tight round the neck. In these latter cases the head may be misshapen, puffed and swollen and seemingly ready to burst, with discoloration of the skin.

These different conditions may require some variation in the treatment; but in either condition our first object must be to excite respiration. The infant, therefore, ought never to be separated from the parent while any pulsation is perceptible in the funis.

Should the funicular circulation have ceased before birth, or shortly afterwards, the cord may be divided at once, for we shall then have more freedom for using our means. In the engorged discoloured infant a spoonful or two of blood may be allowed to flow from the umbilical vessels, before applying a ligature. In such cases we have occasionally placed the ligature so that the compression could be easily removed, and then allowed the blood to flow while the infant was in a bath. The necessary attentions having been paid to the parent, the funis being still attached to the placenta, and left free and unobstructed in its course, the infant is to be laid exposed with its mouth open—all the mucus and other matters which might obstruct the passage of air are to be removed, by passing the finger into the fauces. The nostrils must then be compressed

and carefully wiped; and some cold water may be forcibly dashed on the face and chest, by which we stimulate the external respiratory nerves—for what the par vagum is, as the medium of excitement of the respiration in ordinary circumstances, the fifth pair to the lateral spinal nerves, are at other times.

Should these means not excite sobbing, or some indication of commencing respiration, the infant may be laid on the practitioner's left hand, and slapped suddenly on the breech with his right. If these attempts to *excite* respiration fail, inspiration is to be *imitated* by artificially distending the lungs.

1. To effect this the practitioner's lips are to be applied to those of the infant, interposing a fold of linen, and he is to propel the air from his own chest, slowly and gradually into that of the infant, closing its nostrils, and gently pressing the trachea upon the œsophagus. The chest is then to be pressed to induce a full expiration, and allowed to expand so as, if possible, to effect a degree of inspiration.

2. But it is important in doing this, that the practitioner himself should previously make several *deep* and rapid expirations, and finally a full inspiration. In this manner the air expelled from his lungs into those of the little patient, will be more capable of exciting the dying embers of life. [I found this suggestion in an interesting communication by Dr. Faraday, in the London and Edinburgh Philosophical Magazine, vol. iii. p. 244, for Oct. 1838. It is ascertained that respiration may be suspended longer, as in diving, or in experiments, after such forced respirations, than in ordinary circumstances, from the greater purity of the air in the lungs.—M. H.]

II. 1. In the *midst* of these efforts it should, in the next place, be the office of two other persons to maintain or restore the *temperature* of the little infant, by gently but constantly pressing and rubbing its limbs between their warm hands, passing them upwards in the direction of the venous circulation. Should the infant not show signs of life it may be immersed in a bath of hot water, the regular inflation of the lungs being still persevered in; and now a little hotter water may be let fall or dashed on the thorax (I cannot state how often I have seen this rouse them). We may sometimes (more especially where the

face is puffed and purple) advantageously combine the stimulating application of cold with that of heat; by dashing the head with cold water while the lower part of the body is immersed in the bath. A stimulating clyster may be administered, consisting of a cup of warm water, with a tea spoonful of brandy.

A prolonged use of the warm bath should not be persisted in. The commencement of resuscitation is indicated by a tremulous motion of the respiratory organs; or the infant raises one eyelid, then the other, and sighs or sobs deeply; the pale skin and lips assume a more florid hue and the purple skin loses its dark tint.

2. When respiration is established, the *face* must *still* be freely exposed to the air, whilst the temperature of the limbs and body is carefully sustained.

As soon as possible, a little warm liquid, as milk and water, should be given; to which may be added, if the child be very feeble, two or three drops of *sp. ammoniæ aromaticus*, or half a dozen drops of brandy. If the infant is able to draw the milk and water by its own lips, from a nurse's bottle, or what is better, to suck the breast of a nurse whose milk flows freely, there is no fear.

Nevertheless, our care for the establishment of perfect respiration is not to cease with these first attempts.

Although the child breathe so freely as to remove all fear of immediate danger, it may yet droop and die days after, from the imperfect filling of the lungs with air; for many cases of infantile disease—as cyanosis, bronchitis, atrophy, and even convulsions, owe their origin to the partial continuance of the lungs in their foetal condition. Should the infant be unable to suck after animation has been restored, we must endeavour to promote more perfect respiration by friction on the surface, and stimulate the intestines by an aperient of castor oil; or, if there be much mucus obstructing the bronchi, it may be advisable to excite vomiting by administering half a drachm of ipecacuan. wine.

III. Lastly, if all these remedies should be tried in vain, I would strongly advise galvanic or electric shocks to be passed from the side of the neck to the pit of the stomach, or in the

course of any of the *respiratory* nerves, and their appropriate muscles. No time should be lost in sending for a proper apparatus; but should the lapse of an hour, or even more, take place, before it *can* be obtained, still it should be sent for and tried.—M. H.

CHAPTER II.

ON THE MANAGEMENT OF INFANTS.

On Nursing.

AMONGST the multifarious matter brought forward in the following pages, the aliment most adapted to infancy is one of the first importance. Previously, therefore, to treating of diet more extensively, and the general management of children, I shall enter into a discussion of the case of infants intended to be reared without the breast, or brought up, as it is termed, by *hand*,—a subject esteemed to be of the first importance by writers and practitioners in every age.

An attempt to set forth all the improprieties of this mode of training up infants from the birth, would carry me altogether beyond the limits I have assigned to the work. It would be unpardonable, however, in a work of this sort, not to insist how inadequate every substitute for the breast has been universally found; and therefore how proper it is, that every child should be suckled, and always by its own mother, where her health can safely admit of it. Reason, instinct, experience, all conspire to support this opinion; and whoever will determine to attend only to matters of fact, may soon be convinced of it.* Nature herself points it out: all

* The duty of suckling has the sanction of almost every writer, as well as of many persons of rank; and is distinctly noticed in the remote times of Pliny. Van Swieten remarks, that one of the queens of France suckled her own son, and continued it even during a fever. One of her ladies, however, having, on some occasion, given the child her breast, the queen was so much disgusted at it, that she forced her finger into her son's mouth to excite vomiting, unwilling that it should receive any nourishment but from herself.

the nobler part of the irrational creation is qualified for it, and by instinct obeys—the human race alone, possessed of nobler powers, and rational discernment, perverts those faculties to evade its dictates, and to invent excuses for refusing its claims. It is unnecessary at the present day to advance arguments to prove that human milk is the most appropriate food for infants. A most unanswerable reason against dry nursing is given by Dr. Merri-man, who says, “It has been a part of my duty to endeavour to ascertain the amount of mortality among infants from this source; and after much careful inquiry and investigation, I am convinced that the attempt to bring up children by hand, proves fatal, *in London*, to at least seven out of eight of these miserable sufferers; and this happens, whether the child has never taken the breast at all, or, having been suckled for three or four weeks only, is then weaned. *In the country*, the mortality among dry-nursed children is not quite so great as in London, but it is abundantly greater than is generally imagined. The summer is the most favourable season for making the attempt; but if parents were fully aware of the hazard to which their children are exposed, in the endeavour thus to bring them up, they would rarely choose to place them under the care of the dry-nurse.”

The Author of nature has taken particular care to provide food for every animal suitable to its situation and period of life; for the capability of digesting different substances varies considerably with age. The gastric juice of the cow will not produce the same effect on milk as that of the calf, and man, as he advances in age, would appear gradually and progressively to lose the power of digesting food heretofore appropriate for him.

The aliment (Dr. Paris says) of almost every animal, in its first stage of life, is composed of animal matter; even the graminivorous birds are nourished by the yolk of the egg for several days after being hatched. Milk is the only nutritive fluid with which nature has presented us. It is highly animalized, and its dietetic relations may be considered as intermediate between animal and vegetable matter; it is easily assimilated, and therefore affords a quick supply of aliment to the

system ; while it does not excite that degree of vascular action which is produced by other animal matters.

The food destined for infants in their earliest period of existence contains a moderate portion of nutritive matter diffused through a large portion of fluid, yet quite sufficient for all the purposes of supporting infant life. It is naturally taken very slowly into the stomach, being procured by the act of suction, which excites the secretion of a great quantity of saliva with which it is swallowed, and thus fitted to undergo the process of digestion. This is nature's own process for the nutrition of the infant ; and with some modification prevails throughout the whole range of mammiferous animals. On the other hand, if you give an infant food which it cannot digest, it will obtain no nourishment ; and consequently will be starved just as if you had not fed it at all.

In some very northern parts of the world, as those of Greenland, and the neighbouring country of the Esquimaux, the breast appears to be, in the strictest propriety of speech, the *only* food that nature has provided for infants ; insomuch that, whenever a suckling mother happens to die, her infant is buried with her ; experience (one would hope) having demonstrated the inefficacy of the hard and coarse diet which nature has there so sparingly dealt out, it is esteemed an act of compassion to put an end to an infant's sufferings by plunging it into the sea.

Not only is the breast-milk the only natural, and most proper food for infants, (*experience* demonstrating no artificial one to be equally easy of digestion and nutritious,) but suckling conduces likewise to the easy recovery of the mother, though she should not be able wholly to support her child by the breast, nor to continue suckling so long as the infant may require it. But though, from much experience, I venture to give this opinion, I do by no means intend to assert that every mother is able to suckle her child, even for the month, or would do well to attempt it ; but I am, nevertheless, equally satisfied, that many are very well able who do not ; and that several, who have only through fear been discouraged from doing it in two or three lyings-in, having afterwards been pre-

vailed upon to make the attempt, have gone on with it several months, enjoyed *better* health when they suckled than at any other part of their lives, and their children have thriven perfectly well. Art and management will likewise afford some assistance, when the natural constitution alone may not be fully equal to the task.

In this view, besides a suitable diet, air, exercise, and a regular manner of living, I will venture to recommend cold bathing, especially in the sea, if the season of the year will permit; it is often found particularly useful in restoring the strength, and increasing the milk in nurses of a weak constitution; it can never do harm to a woman merely as a nurse, where no other reason independent of that situation forbids it. The principal caution necessary being not to bathe too frequently; more than twice, or at most three times a-week, being often injurious to delicate habits. Where sea-bathing is not obtainable, the shower-bath, used with the same limitations, may be beneficially substituted.

Thus, besides the advantages derived to infants, it appears that there are others resulting to the suckling mother, and some deserving a further notice. For by this means, where due care is taken, painful inflammations and suppurations in the breast may often be prevented, as may be fairly concluded, not only from the rarity of such complaints in the British Lying-in Hospital, where almost every woman suckles her infant, but from the like authority of Dr. Nelson, who reports, that "out of 4,400 women who suckled their children, only four had milk-sores, and that these had either no nipples or former sore breasts." By following the dictates of nature, and suckling their own infants, women for the most part ensure to themselves better health; for the blood being thus determined reciprocally to the breasts and uterus, they are less likely to have so rapid a succession of children, or subject themselves to enfeebling uterine diseases.

It has been alleged that if a mother would suckle even for a month, it would be advantageous. On this point we agree with Dr. Merriman, who says:—

"I think, if they are to suckle their children 'only during the

month,' that it is better, both for themselves and their infants, who, under these circumstances, are never half suckled, not to make the attempt for that short time.

"The first month of suckling is confessedly attended with more of uneasiness and suffering than is afterwards felt; indeed, after the first difficulties are overcome, this duty is accompanied with sensations of the greatest pleasure and delight; and it seems cruel to require of the mother to undergo all the trouble and pain of suckling, when she is to be debarred of all its pleasures.

"As regards the mammary abscess, I have much more frequently witnessed its occurrence, when the mother has attempted to suckle for the month only, than when she has altogether declined putting her child to the breast. Certainly, if the mother is not to nurse her babe, particular care ought to be taken to guard against fevers, and other ill consequences, and with such care they are not much to be dreaded. The suckling of an infant is too serious a matter to be played with; and if there be not a reasonable hope that the mother will be able to perform this duty completely, she had better at once resign the charge."

For a long time, however, writers have successively complained, that notwithstanding the many encouragements often brought to the ears, and urged upon parents, the tyrant, Fashion, has prevailed over the good sense and natural feelings of many, whose maternal affections can be, in no other instance, suspected. There are honourable exceptions, however; and it is with great pleasure that I have been able to observe, in the later editions of this work, that ladies of rank are every year becoming converts to this maternal duty, and are proud of supplying their offspring with that due nourishment, wherewith nature has purposely endowed them.

Another important and affecting consideration might be brought forward on this head, which I shall, indeed, only touch upon, as it calls rather for the pen of the moral philosopher than of the physician; I mean the sacrifice which poor women make in going out to suckle other people's children, the sad consequences of which are often severely felt by their own,

through neglect or mismanagement, and especially for want of the breast. Indeed, no attention of the nurse can duly compensate this loss, as only the most common substitutes for it can, in their forlorn circumstances, be allowed them. This has become a source of evil that, I fear, has not been sufficiently thought of, and has led to the sacrifice of many infants every year; a matter of serious importance, indeed, to the public, as well as to the families immediately concerned. It is a lamentable reflection, that there should be such a sacrifice of health and life among the children of those women who hire themselves out as wet-nurses. Dr. Clarke, in his "Commentaries on Children's Diseases," speaking of the prodigious mortality among these children, says, "In some families six, in others eight wet-nurses had lost their own children." If ladies who employ wet-nurses were, in commiseration of the sufferings of these unhappy infants, so far to interfere in their behalf, as to insist upon having them placed out under the care of sober, cleanly persons, and in open, airy situations; and especially if they would refuse to take a woman whose child is very young, unless a wet-nurse were procured to suckle it, they would be the means of preserving many lives, and of preventing much of lingering sufferance to these poor victims.

It gives me real concern to find occasion for the least unpleasant reflection upon any part of the sex I so much honour, and upon any of my fair and sensible countrywomen in particular; nevertheless, I cannot help suspecting, that wherever any neglect of parental duties may exist, whether in regard to suckling, or superintending the management of their children,* that does not arise from want of health, or some equally warrantable excuse, it can be charged only on the depra-

* This has long been the case amongst the lower class of people in France; and that nation, therefore, has been very much indebted to the goodness of the late monarch, who to the last was making solicitous inquiries through Europe to discover the best substitute for the breast.¹ Should the method recommended in the subsequent pages be, amongst others, adopted, its claim will soon be determined; and I venture to hope, will yet be to the advantage of the rising generation in that kingdom, and elsewhere.

¹ See Questions proposed to the Royal Society of Medicine in Paris, October 1789, by the late king's authority.

vity of the age, which insensibly corrupts the taste, and perverts the judgment of many who wish to do well; and depravity of manners, when once become general, has ever been considered as the leading symptom of a falling empire, and ought to be pointed out, as far as it extends, by every friend to the community, at whatever hazard of giving offence, in every conspicuous instance of it. Tacitus complains of the degeneracy of Rome in his days, though by no means its most degenerate era, lamenting that, while in former times grave matrons attended to their children as their first family concern, they now, says he, intrust them to the care of some Grecian girl, or other inferior domestic. It is no small satisfaction to me, however, to observe, that in this country there has been no ground for much complaint on this head, and that the evil is gradually diminishing.

Although we believe that, with very few exceptions, all women are able to suckle their children, there are some who, possessing all the zeal to fulfil their duties as mothers, are yet unable to do so; and there are others again who should abstain from suckling on their own account, as well as their infants'. Among the first may be mentioned those who, though otherwise healthy, are of delicate constitution, while their breasts appear incapable of secreting a sufficient supply of milk. Again, there are others who would possess the power, as well as inclination, were it not for a depressed or small nipple, of which the infant cannot lay hold. Yet, by care and attention, many of these women may be enabled to suckle their children in a second lying-in.

Among women who are disqualified for the office of nurse, are those of consumptive and strumous constitution; and those who labour under epilepsy. In the infant born of such a parent there will be a constitutional predisposition to the same disease; and if it is nourished from her system, this hereditary tendency will be confirmed.

No fact in medicine is better established than the hereditary transmission from parents to children of a constitutional liability to pulmonary disease, especially to consumption. Epilepsy, perhaps, is not less frequently hereditary; and in conjunction

with epilepsy we may mention mental diseases, all of which must be classed among those which most frequently occur hereditarily.

Of the best mode of bringing up the children of parents so affected we shall speak presently.

Women of an extremely susceptible and nervous temperament make bad nurses.

The mother who is very excitable, and is alarmed at any little variation she may observe in her infant's countenance, and who is inordinately moved by the common agitations of life, and its domestic annoyances, is kept, by her over anxiety, in a continued state of fever. At one time her milk will be deficient in quantity; at another, so depraved in quality, as to cause serious disturbance to her infant's health.

Women devoted to amusements, and who are only disposed to suckle as it may suit their own convenience, make very bad nurses indeed. Such women ought never to suckle, for it is better to do nothing than do things by halves. We are persuaded, moreover, that a well-intentioned mother, by observance of due regularity, may partake of every rational amusement which society affords, and yet be an efficient nurse.

We will add, in conclusion, that women who become mothers for the first time at a late period of life have seldom the flexibility of disposition, or the physical aptitude for secretion of milk, required to constitute a good nurse.

It may not be amiss to remark, that the demand for the multifarious directions here offered, as well as those given by other writers on the management of children, arises from the false reasoning of those to whose care the infant-state is frequently intrusted; who, instead of being guided by the sober dictates of nature, have adopted the rules of art, falsely so called, or have followed the wild fancies of anile superstition.

On the other hand, the various tribes of the irrational species act in a thousand instances more prudently than man does; and, being guided by instinct, are led implicitly and safely through all their operations. Many quadrupeds, fish, fowls, and even reptiles, seem to know what is proper for them as soon as they come into existence, and have strength sufficient

to reach after it. In other instances, they are guided by the parent, who seems to adjoin some degree of knowledge acquired by experience, to the instinct with which it is endowed; and gradually leads on its young to imitation, whether it be to eat, to swim, or to fly. Man, on the contrary, designed to be the pupil of observation, has scarce any innate discernment; and consequently, his infant race pass through a long period utterly helpless, alike divested of ideas to guide, and of strength to manage for themselves; but to the parent is imparted both, whose province it is to judge for them, and actually to put into their hands or mouths whatsoever they may stand in need of. When the parent, therefore, forsakes the path of simplicity, and lays down arbitrary rules, the result of false science, instead of patient experience, or mistakes the clamour of fashion for, or prefers it to, the voice of nature, confusion and disease must be the unavoidable consequence. Awakened by these, man is loudly called upon to return to the simplicity of nature, and the result of dispassionate observation. To lead to this, will be a principal intention of this work, wherever danger and deviation are connected; assured that the experience of the most judicious and successful practitioners will applaud the design, and confirm the generality of the following observations on the general management of infants.

[I must seize this early opportunity of strongly recommending a very little volume on the subject of the present section, entitled "Letters to a Mother, on the Watchful Care of her Infant," * which I shall have occasion to quote repeatedly in the course of the first part of this work.

The author observes,—“I have long considered that the duties of a mother to her children involve many circumstances not usually imagined to belong to them. And, chiefly, I regard the mother as the natural guardian of her infant's health. I do not mean that she is to supply the place, or to undertake the office of the physician, which would be preposterous; but that she should be the *watch* over her child, and the *alarmist* if its health should become deranged.

* Published by Seeley and Burnside, Fleet-street.

Do not therefore expect a system of quackery in these Letters ; a set of nostrums for infantile complaints. I have a far higher and nobler object in view. It is to enable you to judge when your infant is threatened with danger, and so to send for medical aid—*before it is too late !*

Physicians have, indeed, so often to regret that they are summoned in infantile diseases when the monitory signs, in cases of a sudden or insidious attack, have passed away unheeded, and when the disease has been allowed to run its course to a fatal stage, that I think it not only a legitimate undertaking, but an imperative duty, to speak to you first and principally of those monitory signs.

And in order that you may become this guardian of your infant's health, it is absolutely necessary that you should be its nurse. In every point of view, then, I must consider this as your first and most imperative duty.

The mother's milk, and the mother's warmth, are the proper sources of nutrition and of heat to her own infant. It should draw no other breast, and lie upon no other arm.

In order that the milk may be wholesome, the health of the nurse must also be unimpaired ; her diet must be rigidly simple, the bowels carefully regulated, and every rule of health, even such as bodily exercise and mental quiet, must be undeviatingly observed. Who but a mother will submit to this system of discipline and self-denial ? Yet, if the diet be improper—if the bowels be neglected—if exercise be not duly taken—if the mind be subjected to anxiety and care, the infant will assuredly be exposed to danger.

In these circumstances, indeed, lie the hidden springs and sources of many an attack of convulsion, which the infant may not survive, or which it may survive with an impaired intellect or crippled limbs. This is a subject scarcely thought of by mothers ; but it is one full of importance, and its neglect is fraught with the most melancholy consequences.

It is notorious that the lower ranks, from which wet-nurses are alone taken, are indifferent as to rules of diet, prone to indulgence, and totally reckless of the state of their bowels. And as the wet-nurse has usually disposed of her infant, by "placing

it out," as the phrase is, she is, if she have any tenderness for it, continually a prey to anxiety on its account. It can therefore scarcely be, but that her milk will be more or less morbidly affected, and thus become the hidden and unsuspected cause of indispositions, the origin of which will be erroneously supposed to exist elsewhere.

Further, wet-nurses are commonly very dishonest, and become quacks, and tamper with the infant's health by giving medicines. Many a tea-spoonful of spirits, and many a drop of laudanum, are swallowed by infants, unknown to their mothers. A present inconvenience, such as wind, or pain, is thus often removed, at the expense of much subsequent danger.

Nursing her own infant, the mother becomes the watch over its growth and development; over its health, its happiness. Have you never seen an infant rickety because it was ill nursed? Have you never known insidious and incurable diseases to steal on from a similar cause? Have you not an eye also to see that one infant is happy, and another miserable, although but an infant? Be assured that it is often the mother's fault, if the infant's limbs be crooked, or its mind unhappy; or, I had almost said, if its health be impaired.

To every mother, then, the care of her own infant and child is to be committed in its largest, broadest sense. She is first to submit herself to all those rules of diet, medicine, exercise, and quiet, which are essential to insure her own good health. She is then to supply her own infant with milk, and with warmth; and for this latter purpose she should lay it by her own side in the night. She should become, in the third place, the superintendent of its health, detecting the first signs of indisposition, and seeking immediately for the remedy.

Nor does the mother's office terminate even here; she will go on to superintend the development of its bodily and its mental powers, its dispositions, and its affections.

And now let me ask you what you think of a mother's duties? Are they so trifling that they may be filled by a hireling, destitute of feeling, of intelligence, and of education; who will let your infant cry, or make it cry, without even imagin-

ing that it is ill in the first case, and *made* so in the second? —that its temper is injured, its mind corrupted?"]

THE GENERAL MANAGEMENT OF CHILDREN.

Let us imagine an infant just born, who, at this moment, calls for our best attentions. At first, it may be observed that it ought not to be exposed to any thing that may violently or too suddenly affect the senses; on which account Moschion and Albinus have well advised, that it should not be exposed either to great heat or cold; not to a strong light, nor odours of any kind, however grateful to adults; the unpleasant effects of which are sufficiently manifested by the infant itself. The infant at birth is so susceptible of cold as to be painfully roused by the sudden transition which it makes from the unvarying high temperature of the uterus to the comparative coldness of even our summer atmosphere. This pain, however, is but a necessary consequence of the access of air to the surface of the body; which in itself is highly beneficial, exercising (as we learn from the ingenious researches of Dr. Edwards) a vivifying influence well calculated to counteract the greater or lesser degree of insensibility induced by the pressure to which the brain is subjected during birth. The pain, also, by exciting the infant to cry, contributes materially to the perfect filling of the lungs with air; if this cannot be effected death is not unfrequently the result. The beneficial effects of exposure to cold, however, are of short duration, and if the exposure were protracted for any length of time it might be extremely hazardous.

We are informed by Dr. Edwards that the heat of mature infants at birth is from 3° to 5° less than that of adults, varying between 93° and 95° ; that the heat of premature infants is still less; and that the power of all young animals being at its minimum at birth, they have not the same capability as adults of resisting a diminution of their temperature from exposure to cold. Instinct and reason, therefore, really dictate to us the necessity of keeping infants warm.

The infant being separated from the parent by the division of the funis, it is customary to put a flannel cap on its head. It is then to be enveloped in a soft warm flannel, (in nursery language called a receiver,) and, if it be winter, carried to the neighbourhood of a good fire, but out of the line of its direct rays.

The attention will next be called to the washing and dressing it, together with other little offices suited to the occasion; and this first washing is of greater importance than is usually imagined, being amongst the *little* things which are often overlooked by writers and others, and by some thought of no consequence; * but it is not every little thing that may safely be neglected, or carelessly done. In regard to poor people especially, and infants born in hospitals, and other crowded apartments, the importance of proper washing is greatly increased; the foulness left upon the skin being a remote cause of some dangerous epidemic complaints.† Some infants also are covered much more than others with a thick, viscid matter, called *vernix caseosa*. It is a secretion of butyraceous consistence, proceeding from the skin of the foetus, and admirably adapted for a lubricating substance during child-birth. This cleaves so firmly to the skin that it is not easily washed off. There are, however, many reasons why this should be done; and one very sufficient one is, that its presence is likely to obstruct perspiration, which can never be duly performed where the skin is left anywise foul. The washing is most conveniently done in a very large basin, placed on a chair, or fixed on a low stand, (such as is commonly used in nurseries,) and holding a sufficient quantity of warm water to cover the infant, with which soap may be used. The face and head should first be washed, before the water is tainted with the impurities which cover the skin, and which might irritate the eyes, now extremely delicate; or fresh water may be used for this purpose. The head, now lying on the left arm of the nurse, the body

* Dr. Hamilton.

† See Baumes on the Jaundice and Mesenteric Fever.

and limbs are to be immersed in the water and the folds of the skin, particularly in the groins and arm-pits, to be well rubbed and sponged with a soft sponge. No force likely to abrade the skin need be employed for the removal of the vernix; where, however, it adheres very tenaciously, smearing the part with a little cold cream, or pomatum, or lard, and then washing, will facilitate its removal. Its entire removal at first need be a source of no anxiety, as it will dry and scale off in a day or two, or most likely be removed in the subsequent washing. It is customary with some nurses to mix a portion of brandy or gin with the water, while others rub a little spirit on the head after it is washed. This is of no earthly use; yet, if they are careful that none of the spirit gets into the eyes, it is scarcely worth while to contend with them about so universal and popular a custom. The surface of the skin should always be carefully and thoroughly rubbed dry with a soft napkin. The same scrupulous attention to washing, rubbing, and drying should be continued for a day or two. The infant being well washed and dried, the nurse now proceeds to dress it; first, by making arrangement for the protection of the remnant of the navel string, the cut surface of which must be carefully examined, lest, as sometimes happens, secondary bleeding should occur. This takes place from the ligature no longer pressing on the vessels, in consequence of the oozing out of the gelatinous fluid which makes up the bulk of the cord. This occurrence is most likely to happen where the cord is particularly thick from the abundance of the gelatinous fluid. Where the cord is very large, a second ligature applied firmly and left on its umbilical extremity will commonly prevent hemorrhage; but should it occur, a fresh ligature must be tightly applied and its ends cut off close to the knot. In ordinary cases, the cord is drawn through a hole cut in a piece of old linen about four or five inches in diameter, which is to be gently folded round it. In the preparation of this envelope nurses are extremely anxious to have it dry and warm. It is always held carefully to the fire, and sometimes even scorched before they will permit its application. The cord thus enveloped is to be placed

flat on the child's abdomen, and secured there by a band of thin flannel, five or six inches broad, and long enough to go twice round the body. The chief use of this band is to confine the navel-string and its covering, and perhaps to afford a moderate support to the abdomen. Care should be taken that it never makes tight pressure on that cavity; and on that account it is as well to have it made of fine flannel, cut diagonally, or bias, so that it may be perfectly elastic. The roller should be fastened with needle and thread; indeed, to no part of the infant's dress should pins be used; sewing may be performed, where required, with equal celerity; or strings, where they are applicable, may be substituted. A well-informed nurse, before she begins to dress the infant, has always two or three needles ready, armed with thread. A muslin cap is to be put on the head in the place of the flannel one before mentioned, which will be a sufficient protection against cold; care being taken that it does not confine nor compress the head.

It will not be requisite to specify the form or construction of the remainder of the dress, (enumerated under the titles of shirt, napkin, pilch, flannel, and a frock or bedgown,) further than to observe that they must be light, soft, and sufficiently warm, their quantity varying with the climate or season of the year, and their quality with the opulence of the parents. Provided the dress fulfil these ends, there will be no occasion for interfering with the parents' taste, or the fashion of the day. But whatever tends to compress the chest or abdomen, or restrain the movements of the head or limbs, ought to be most strictly prohibited.

The dressing being completed, the infant is to be loosely wrapped in a thin flannel shawl, in such a manner as will not impede the free access of air to the mouth, or interfere with the spontaneous movements of the limbs. The infant is now to be placed in a cradle or bed, so situated that it shall not be exposed to currents of air nor too strong a light, which might disturb it or irritate its eyes. It will usually fall asleep for some hours, and it may rest until awakened by the call for food.

After a little time, and sometimes on the next day, many nurses wash a child all over with cold water; a practice highly extolled by Dr. Armstrong, as well as many other practitioners; but though no one can be a greater advocate for everything that is bracing than I am, I cannot approve of this substitute, as it is called, for other bathing. To see a little infant of a few days old, the offspring, perhaps, of a delicate mother, who has not even strength to suckle it, washed up to the loins and breast in cold water, exposed for several minutes, perhaps in the midst of winter, (when children are more liable to disease than those born in summer,) itself in one continued scream, and the fond mother covering her ears under the bed-clothes, that she may not be distressed by its cries, has ever struck me as a piece of unnecessary severity; and savours as little of kindness, as plunging an infant a second or third time into a tub of water, with its mouth open and gasping for breath, in the old-fashioned mode of cold bathing: both of which often induce cramps and pains in the bowels, and weakness of the lower extremities, but rarely an increase of the strength. It surely must be proper, in winter time at least, to use moderately warm water for the general washing; and all that is required with cold water is to wash or sponge those parts with it, where any acrid discharge is likely to produce galling or excoriation.

"So many instances," says Dr. Merriman, "have occurred within my knowledge, of cold bathing, improperly and injudiciously adopted, having been productive of serious ill effects, that I should ill perform the duty of an editor, did I not caution my unprofessional readers to be extremely circumspect before they adopt the use of so powerful an agent as the cold bath, not only as regards infants, but children further advanced in life."

FOOD AND MEDICINE IMMEDIATELY AFTER BIRTH.

During the existence of the foetus in utero it is nourished by the parent through the medium of the umbilical cord. The liver, too, we are told, by my friend and colleague, Dr. Robert

Lee, "performs some important office destined to assist in its nutrition. The stomach of the fœtus was usually found to contain a semi-transparent ropy mucus, and occasionally acescent fluid, without any sensible admixture of albuminous or other apparently nutritious matter. In the duodenum and upper portion of the small intestines is found a semi-fluid matter of an albuminous character. This matter has always been found in greatest abundance around the papillary projection through which the common duct of the liver opens into the duodenum. In the lower half of the small intestines the albuminous matter was greatly diminished, and near the colon it almost entirely disappeared; the colour, also, of the contents of this lower portion of the small intestines was different from that noticed in the contents of the duodenum, being of a greenish tint, assuming more and more the characters of meconium, as the distance from the origin of the colon diminished. These different substances were found to be slightly acescent. The great were much more distended than the small intestines, and contained throughout a dark green, homogeneous substance, generally neutral, or slightly alkaline, in which no albuminous matter could be detected, and which was consequently excrementitious."

"The absence of albuminous matter in the stomach of the fœtus, its invariable presence in the upper half of the small intestines, its gradual diminution as we proceed downwards, and its disappearance in the colon, are circumstances which, when viewed in connexion with the great length of the small intestines, seem to prove that the absorption of some nutritious substance takes place from the intestinal canal in the latter months of gestation, just as it does after birth."

The dark green, tenacious substance filling the lower part of the intestines is denominated the meconium, and is the excrementitious matter resulting from the processes carried on in the digestive organs. As the retention of this was thought, and is by many still believed, to be injurious to the infant, its speedy expulsion is considered a matter of some importance. Hence it is customary to give the infant some purgative, most commonly a spoonful of castor oil. Now

and then more drastic purgatives are given; and others, again, even at the present day, cram butter and sugar into the unfortunate infant's mouth.*

Where an infant is nursed by the parent, it is not essential that any purgative should be given, and the more drastic ones must be positively injurious to the delicate mucous membrane of the infant's intestines, fitted only for the reception of the mildest nutriment. Where the infant cannot be applied in the first instance to the breast of its mother, or is to be suckled by a wet nurse whose milk is somewhat older than proportioned to its age; or if it is to be brought up by hand; or if the abdomen is distended, and no evacuation has taken place for five or six hours after birth, a teaspoonful of castor oil may be given. It is better under common circumstances to allow the infant to sleep quietly after its birth until the parent is ready to receive it. As soon as the mother has sufficiently recovered from the fatigue of her labour, within four or six hours, the infant should be applied to the breast, the earlier the more desirable. The early application of the infant to the breast may sometimes be of considerable importance on account of the mother, for where there is a tendency to uterine hemorrhage, it is one of the most powerful means of counteracting it. At first the milk is secreted in small quantity, and is of watery consistence resembling serum, or whey, and is denominated colostrum, and is generally considered to be purgative. This is denied by others, who suppose that it excites the bowels by mechanical distention, and so in effect produces expulsion of the meconium, as other food is found to do where it is given from necessity or failure of the milk. We are disposed to believe that the first milk, or colostrum, does possess purgative properties, (like the first milk or cleansings of cows,) and there is reasonable evidence of the infant having nutritious matter in the upper part of the intestines at birth quite sufficient for its immediate support.

* It has been conjectured, with more ingenuity than probability, that this traditional custom has arisen from the text, "Butter and honey shall he eat, that he may know to refuse the evil, and choose the good."—(Isaiah vii. 15.) But it is more likely that the resemblance is accidental, and that these substances have been selected merely as slightly purgative and easily procurable.

If the mother is able to suckle her infant from the first, no artificial food or physic is required to be given; but should she be unable so to do from fatigue or otherwise, or the infant be outrageous, then a moderate quantity of lukewarm milk and water in equal parts may be given; or even a few teaspoonfuls of lukewarm water alone will answer this temporary purpose. So little does the infant require food, that the thumb put into its mouth will often solace the child, and it will go to sleep till the mother is ready to receive it.

Should the secretion of milk not be sufficiently established in the mother's breast for three or four days to afford the infant adequate nutriment, then the milk and water, as mentioned above, should be repeated at moderate intervals of three or four hours, and in this case it is better given through a nurse's bottle; but this should be desisted from immediately the mother is able to afford sufficient nourishment, or a wet nurse can be procured.

Presuming, then, the infant to have been washed, dressed, and established at the breast of its mother, we shall now proceed to consider the farther attentions necessary to its well-being.

CLEANLINESS AND BATHING.

In infancy, cleanliness is so essential to health, that too much attention cannot be paid to it. Not only is the skin extremely delicate, sensitive, and easily injured, but it is the seat of a continual excretion or exhalation of waste matter, in the form of perspiration, often exceeding in quantity that from the bowels and kidneys united.

The perspired matter consists of fluid and solid parts, and according to Thenard, is composed of much water, a small quantity of acetic acid, of muriate of soda and potash, a small quantity of earthy phosphate, an atom of oxide of iron, and a trace of animal matter. At the usual temperature of the body the fluid part of the perspiration escapes and mingles with the air, in the form of vapour, while a considerable portion of the solid and saline ingredients is left adhering to the skin and

clothes, both of which it speedily dirties. When the impurities thrown out by perspiration are allowed to remain long in contact with the skin, they become a source of irritation, and by obstructing its pores, impede any farther exhalation. The consequence is, that the waste matter, deprived of its usual free outlet, is either partially and hurtfully retained in the system, or makes its egress by some other channel, such as the bowels, kidneys, or lungs, at the risk of producing diseases in them, by over excitement of their functions. At other times the accumulation of impurities on the surface will be productive of distressing excoriations, or obstinate and sometimes permanent cutaneous diseases.

In accordance with these views, the infant, at first, should be washed twice daily with warm water and a fine sponge, soap being only required to those parts of the body which are exposed to the reception of dirt ; or at night it may be immersed in a bath, for the purpose of thoroughly cleansing the skin. By degrees, the temperature of the water in the morning, may be reduced, the evening bath being continued warm enough to be grateful to the feelings. The first few days after birth, during the washing, attention should be paid to the state of the navel string. The linen in which it is enveloped in the first instance usually adheres to it very firmly ; if it remains dry, we need not disturb it, but merely raise it gently, so as to admit of the part underneath being carefully washed and dried. In ordinary cases, the cord dries, and falls off between the fifth and tenth day, leaving a small ulcerated surface. This ulcer gradually heals in a few days, requiring little interference, except the daily application of a piece of dry old linen rag.

After washing or bathing, the skin should always be carefully and thoroughly dried with a soft napkin, and well rubbed afterwards with a flannel or the hands, and the surface should be warmed and stimulated by the assiduous gentle friction made use of. The process of washing and drying must not be done languidly, but briskly and expeditiously ; it will then be found to be one of the most effectual means of strengthening the infant. It is especially necessary to be careful to dry the arm-pits, groins, and nates ; and if the child is very fat, it will

be well to dust over those parts with hair-powder or starch; this prevents excoriation and sores, which are sometimes very troublesome.

The frequency of the excretions from the bowels and bladder in infants requires a correspondent change of napkins for the reception of those matters; and the immediate removal of every soiled or damp portion of the dress is indispensable. A nurse cannot be too careful of this duty from the first, so that she may discover the period when these discharges are about to take place, and thus may not only anticipate them, but teach the infant at a very early age to give intelligent warning of its necessities. Thus a habit of regularity with regard to these functions will be established, which will continue through life, and tend greatly to the promotion of health. In such training we are not deviating from the path of nature, but rather working in unison with her tendency to periodicity.

As the infant grows older, the water for the bath may be reduced in temperature; and at three or four months' old, provided it continues healthy, and the season of the year warm, it may be beneficially used cold; but to make any sudden change in winter, or where considerable delicacy exists, would be attended with risk. Under all circumstances, the water should have stood in the nursery during the previous night.

The bath may now be used the first thing in the morning; and in warm weather, the infant, before being bathed, may be allowed to play about undressed (and stretch itself on a blanket placed on the floor) for a few minutes, and thus enjoy the luxury of what Franklin calls an air-bath. In this respect its own pleasure may be consulted. If it is strong enough to bear the exposure with advantage, it will seek it; if not, it will shun the contact of the air, and, of its own accord, seek for protection. In the country the children of the peasantry may be seen, of a summer's morning, exhibiting themselves with infinite glee, without those troublesome disguises we put on, in *puris naturalibus* at the cottage door.

The infant should never be immersed in the bath immediately after having the breast, particularly in the earlier weeks of existence, as the bath may be injurious if used upon a full

stomach. We now and then meet with children who are frightened by immersion in the bath in any form, and with whom it decidedly disagrees. In such cases, of course it ought to be given up, and washing and sponging with tepid water be substituted.

In all circumstances the greatest care must be taken, never to allow the infant to be exposed to the air with a skin partially wet, for imprudent exposure may be productive of some serious inflammatory affection.

Many of the complaints urged against the use of the bath arise entirely from mismanagement and the neglect of the most obvious precautions.

The bath should, indeed, never be used so as to leave an impression of coldness, or actual loss of warmth, or lividity of any part of the surface. And when we consider how readily infants lose their temperature, and how slowly they regain it, we shall view the cold bath as one of those measures requiring great precaution in infancy. The best kind of bath is a shower bath, of great simplicity. It consists of a tin vessel in the form of a large bottle, pierced at the bottom like a cullender, and terminating, in the upper part, in a narrow tube: when put into water it becomes filled with this fluid, which is retained by placing the finger upon the tube; on removing the finger, the water flows out gradually. The quantity and the temperature of the water must be proportionate to the age and powers of the child, the weather, and the season. It should be warm or tepid for infants at first; afterwards it may be used a little cooler. Its tonic effect may be augmented by the addition of bay salt, and by much active rubbing. The first few baths may be quite warm, and made a sort of amusement, until the infant is familiar with the little shower. It may gradually be made a remedy. And if it were universally used night and morning, in this metropolis, I think the benefit to the health of the rising generation would be extremely great.—M. H.]

ON THE FIRST CLOTHING OF INFANTS.

Upon the first sight of a new-born infant, every one is struck with the idea of its weakness and helplessness; and we often

take very improper methods of strengthening it. It is *designed* to be weak and tender in this infant state, as is every object around us.* Take a survey of nature, from the first opening leaves of the vernal flower, or the more delicate foliage of the sensitive plant, to the young lion or the elephant; they are all, in their several orders, proportionally weak, and cannot exist without some exterior support: but they stand in need of nothing but what nature has prepared for them. If seed be cast into a proper soil, it wants only the surrounding elements to ensure vigour and maturity. So, if the tender infant be born of healthy parents, and at its full time, it is usually sufficiently strong; proper food and nursing (with ordinary attentions to screen it from the extremes of heat and cold) are the elements whose fostering influence it requires: if it have these, it will need nothing more.

It is true it is very weak; but is it therefore to be tight rolled, under the idea of supporting it, and giving it strength? It is a bundle of tender vessels, through which a fluid is to pass uninterrupted, to be equally distributed through the body, and which are therefore surrounded by a soft medium, pre-disposed to yield to the impetus of their contents. Hence we cannot but conceive how injurious any great pressure must be to so delicate a frame, which before birth swam in a soft fluid. But besides this, the infant requires freedom and liberty on other accounts; the state of infancy and childhood (as Dr. Gregory observes) is impatient of restraint in this respect, through "the restless activity incident to youth, which makes it delight to be in perpetual motion, and to see every thing in motion around it."

Let us again advert to the irrational species, whose more sagacious conduct so often disgraces our own. There is no occasion on which they do not seem to consult propriety; and, having a right end in view, they as certainly accomplish it, and always in proper time. Doth a little bird desire to pre-

* Nous naissons foibles, nous avons besoin de forces; nous naissons dépourvus de tout, nous avons besoin d'assistance; nous naissons stupides, nous avons besoin de jugement? tout ce que nous n'avons pas à notre naissance, et dont nous avons besoin, étant grand, nous est donné par l'éducation.—*Rousseau*.

pare a lodging for her young, it is sure to make choice of the fittest situation, whether to defend them from dangers, or obtain the most convenient supply of their wants; if to this end it is necessary to construct the nest of rough and strong clay, it is still lined with down: the young lie warm and secure, but they lie at their ease.

"In this view of nature (says a good writer*) we shall find the birds not only provide nests for their young, but cover them with their wings, to guard them from the chilly air, till time has increased their feathers. The beasts, with amazing tenderness, cherish their young till nature has lengthened the hair, the wool, or whatever covers them, or time has given them the power of action. Further, we shall find that insects, and all the vegetable creation, shoot out into life, and receive vigour, comfort, and support, from that glorious body the sun: so indispensably necessary is warmth, and so essential to the raising and preserving of all." But, necessary as warmth and support most indubitably are, they must not be obtained at the expense of liberty and ease; which, during the fragile state of infancy especially, are of peculiar importance.

I am not ignorant, indeed, that for many years past, the very ancient tight mode of dressing infants has been discontinued, for which we were probably first indebted to Dr. Cado-gan. It is certain, also, that for the last forty years the fashion recommended by him has been improving; but there is yet room to go forward; and were every tender parent in this country thoroughly sensible of its advantages, it would soon become fashionable to see children as much at their ease on a christening day, as they are at night when laid in their beds. And I may be permitted to add here, what every modern practitioner has adverted to, that were strings, almost in every instance substituted for pins, physicians would seldom be at a loss to account for the sudden cries and complaints of infants, which are too often produced by this needless part of their

* Nelson; whose Treatise on Health I have perused with more satisfaction than most of the modern productions that I have examined, because he has taken nature for his guide.

dress *—a practice which cannot be too strongly censured, and which is now nearly laid aside by the better classes of nurses.

Nature knows no other use of clothing but to defend from the cold ; all that is necessary, therefore, for this purpose, is to wrap the child up in a soft loose covering, and not too great a weight of it ; to which ornaments enough might be added without doing mischief. And had this matter been always left to the ordinary discretion of parents, this is probably all that would have been done ; but the business of dressing an infant has become a secret, which none but adepts must pretend to understand. The child itself, however, discovers to us the propriety of such clothing, by the happiness and delight it expresses every time its day-dress is removed, and its night-clothes put on, which are looser, and less thick than those worn through the day, and the lower limbs less confined. *The art of dressing* has laid the foundation of many a bad shape, and what is worse, of very bad health through the greater part of life.

Infants are very susceptible of cold, and their power of generating heat, and resisting cold, is very much less than in adult life ; from inattention to this fact, and a mistaken theory of the bracing and hardening effects of cold, infants are often unnecessarily exposed to, and too thinly clad ; thus the foundation is laid for subsequent disease, and the life of many children needlessly sacrificed. Nothing can be more injurious in this variable climate than to keep infants, and older children, in a state of semi-nudity, with bare breasts and thin clothing ; on the other hand it must not be forgotten, that too warm clothing is also a source of disease, and it is not necessary to cover them up with tippets and shawls in the house. The leading qualities required in the material for clothing are lightness, softness, and warmth ; while its quantity must be regulated according to the climate and season of the year.

* A gentlewoman many years ago informed me, that one of her children, after long and incessant crying, fell into strong convulsions, which her physician was at a loss to account for ; nor was the cause discovered till after death ; when on the cap being taken off, which had not been changed on account of the illness, a small pin was discovered, sticking up to its head, in the large fontanelle.

In its construction the dress should be so simple as to admit of being easily put on and taken off, for dressing is an irksome process to the infant, causing it to cry and exciting much distress; and while it affords ample protection to the body, it ought to admit the fullest expansion of the chest and abdomen, and perfect freedom of motion in all the limbs.

If the infant is prematurely born, or is extremely feeble, more particularly in the winter season, flannel ought generally to be preferred for the whole of the dress in contact with the skin; but this is not necessary in robust and healthy infants.

The common practice of dressing infants in long flowing clothes during the first few months is attended with the advantage of protecting the body and lower extremities against cold; and when it is not carried so far as to overheat them, no harm can arise from following it; in cold weather the feet should be further protected by soft woollen socks, or worsted shoes, which retain warmth, without in any degree compressing the feet. The ordinary upper dress should extend sufficiently high to protect the neck and upper part of the chest from variations of temperature, and the sleeves should be made long enough to reach to the wrist. The head may be covered with a thin muslin cap. This piece of dress is falling very much into disuse, especially by night; and as there is a predisposition to morbid excitement of the brain in childhood, during the period of dentition, it is desirable that the circulation through that organ be preserved in as tranquil a state as possible, which can be done by keeping the head cool.

ON SHORT COATING.

It will be advisable, in order to inure infants to the air, that this change in their dress be made as early as the season of the year will permit: but their dress should be still loose and easy. Children are frequently kept without shoes or stockings till they are three or four years old, and boys often till they are breeched; but, on many occasions, this exposure of the legs to cold is attended with ill consequences. For want of caution in this particular, tender children suffer exceedingly in severe

winters, and are distressed with chilblains, merely for want of proper covering to their limbs. I have seen a child of four years old, the daughter of people of fashion, whose legs were covered with these sores quite up to the knee, and yet her mother could not be prevailed upon in time to suffer stockings to be put on, because strong and healthy children are thought to be better without them. And there is an additional reason for such cautions, from the fashionable mistake of habiting children indiscriminately too thinly; it is obvious that a mode of dress appropriate to the athletic, may be very hazardous to those of a delicate habit. When boys come to be breeched, it will with more propriety be done at the beginning of winter, than in summer, as the dress is, upon the whole, warmer, especially about the chest; and it is always important to keep this part warm, since inflammations of the lungs are often brought on by the exposure of the chest to the cold.

In every article of dress the principle should be carefully followed of placing no constraint upon the motions of any part. For the boy tight-waisted trousers or braces; and for the girl stays and corsets of all kinds must be forbidden during the whole period of childhood. The injuries inflicted upon the organs of the chest and abdomen, by stays and corsets, are well known to be most serious; the chest may be completely altered in shape, and the lungs diminished in their capacity by pressure so applied; while, at the same time, the stomach and liver are driven from their natural position, and made to press on the other organs of the abdomen. Derangements of the function of respiration, circulation, and digestion follow as natural consequences, and but too often lead to an early grave; or, perhaps what is much worse, a life of prolonged delicacy and ill health.

The only way in which we can assist in forming a really fine figure, is, to remove all restraint, and secure, as far as possible, so free an action to the muscles as will lead to their perfect development. By such a course, we shall best promote the acquirement of a good carriage, which is infinitely more likely to be the result of a perfect balance of the muscles, than of any mechanical support whatever.

If the principle of avoiding constraint were also to be held in

view in the management of the child's feet, much suffering would be spared in after life. The shoes should be so constructed as to protect the foot equally without undue pressure upon particular parts.

ON AIR.

The great importance of this has been set forth when speaking of the *diseases* of infants: I shall here, in a more particular way, observe, that the age, constitution, and circumstances of the child, and the seasons of the year, ought always to be taken into consideration; that being highly proper on one occasion, which would be very detrimental at another. In general, it has been said that warmth is friendly to very young infants, but they should, nevertheless, be inured gradually to endure the cold air, which is absolutely essential to their health. I cannot, therefore, agree with Dr. Armstrong, who thinks that the reason of the rich losing fewer children than the poor, is from their being kept warmer. On the other hand, it was aptly said by one, that "a warm nursery fills a cold church-yard." In fact, it is not a mere cold, but damp and confined air, that is so injurious to children, and to which the poor are peculiarly exposed, especially during sleep. Much caution, indeed, is necessary on this head in this unsettled climate, and evinces the necessity of parents superintending those to whose care they intrust infant children, since nurserymaids are often indiscreet in keeping them too long in the air at a time, which is a frequent occasion of their taking cold, and deters many parents from sending them abroad so often as they should. Another, and a worse, as well as a common fault of nurses and servants, is that of standing still, with children in their arms, in a current of air, or either sitting down with other servants, and suffering children who can run about, to play at a little distance by themselves; to sit down on the grass, or in damp places, and such like irregularities; the consequences of which are often a long confinement to a warm room, and either a prohibition against going out so much as they ought, or a fresh cold, owing to a repetition of such irregularities.

But if children be properly clothed and attended to, they will not only endure a great deal of cold, but of other inclement weather; it is true that caution and prudence are required in training up infants to withstand the influence of cold, and to profit from being abroad when the air is very cold or moist. Yet it certainly may be accomplished; and it is a known fact, both among the higher as well as inferior ranks of people, that those children are the healthiest, and suffer the least from colds, who are accustomed to be abroad in almost all kinds of weather. But to render children thus strong and healthy, it is not sufficient that they be abroad daily in a carriage; they should be carried on the arm, and put on their feet at a proper age, and partake of such exercise for a reasonable time, as shall keep them moderately warm, and bring them home in a glow, instead of wishing to rush toward a fire the moment they return; such transitions being always improper, and only rendering children more liable to take cold.

Kruger has some such pertinent remarks on this head, as it will scarce be thought a digression to transcribe:—"The important step," says he, "a man takes into this world, imparts to him all the privileges thereof, of which this is one—the ability to bear the effects of the air. Why, then, debar him from this privilege? as he is all his life to be encompassed with this air, at one time cold, at another warm, now moist, again dry. For the cold of the air so anxiously avoided, brings along with it the means that secure against its own inclemency; the greater strength of fibres imparted by it to the child, procuring, by means of a brisker circulation, a greater degree of heat, and consequently the reverse of its violent impression.

I cannot better close these remarks on the benefit of a pure air, than by quoting the remarks of the Rev. John Howlett; who observes, that in consequence of the humane suggestions of Mr. Jonas Hanway, about fifty years ago, an Act of Parliament was passed, obliging the parish officers of London and Westminster to send their infant poor to be nursed in the country, at proper distances from town. Before this time not above one in twenty-four poor children received into the work-houses lived to be a year old, so that out of two thousand eight

hundred, the average annual number admitted, two thousand six hundred and ninety died ; whereas, since this measure was adopted, only four hundred and fifty out of the whole number died ; and the *greater* part of these deaths happened during the three weeks that the children were kept in the workhouses.

From the Registrar General's Report, it appears, that in places where the population is scattered and the atmosphere pure, deaths under one year are as two to three only, when compared to localities presenting a population confined amidst crowded manufactories, or living on a flat and marshy soil. The respiration of pure air is at all times and under all circumstances indispensable to the health of infants. Mortality in infancy bears a direct ratio to the impurity of the atmosphere ; hence, it is greater in towns than in the country, and in crowded manufacturing districts than in places which are airy, well ventilated, and less populous.

The nursery should, therefore, be large, and thoroughly ventilated. It should have a sufficient number of windows, with a chimney, to insure free admission of light and complete circulation of air. Within it cooking at all times should be strictly forbidden. The sleeping-room should be spacious, and the number of persons sleeping in it the fewest that circumstances will possibly allow. Air should be freely admitted, as nothing is more prejudicial to health than sleeping in an impure and heated atmosphere. The bed should be without tester, entirely open at top. Curtains, except to guard against currents of air, are highly objectionable, nor should they ever be drawn close around the bed. The bedding should regularly, when unoccupied, be freely exposed to the air, and all impurities removed without delay from the apartment.

Where one apartment only is used as day and night nursery, attention to all these circumstances becomes of still greater importance.

The proper time for taking infants into the open air must, of course, be regulated by the season of the year, the state of the weather, and individual peculiarities. A delicate infant, born late in the autumn, will not generally in this climate derive advantage from being carried into the open air until the

ensuing spring; and, if the rooms in which it is placed are large, often changed, and well ventilated, it will not suffer from the confinement, while it will most probably escape catarrhal affections, which are so often the consequence of the injudicious exposure of infants to a cold and humid atmosphere.

Infants born in the early months of winter die in a much larger proportion than those born in the early months of summer. Young animals brought forth amidst severe cold do not thrive unless succoured by genial warmth, without which they remain puny, or pine and die.

Where, however, infants are strong and healthy, no opportunity should be lost of taking them out at proper and stated periods of the day; for experience fully proves, that exposure to free and open air has the most invigorating and vivifying influence upon the system. The face may be protected from the cold by a veil. Damp is still more pernicious than cold, constituting, as it does, a perpetual source of cold to the body. An atmosphere loaded with watery vapours, by its conducting power, carries off with great rapidity the heat from the animal frame, and becomes a fertile source of disease. Young asses exposed to damp and cold are attacked with tubercles of the lungs, and lambs with the rot. Most of the monkey tribe perish in this climate from such exposure under tubercular or mesenteric disease. The period of infancy passed, and that of childhood attained, with strength and vigour to take active exercise, children properly clad can scarcely be too much in the open air whenever the weather will permit. If habituated in childhood to exercise out of doors at all seasons, they will gradually be inured to heat and cold, and, in the sequel, become more capable of encountering the vicissitudes of weather and climates.

I am afraid that Dr. Underwood's strongly-expressed opinion *of the absolute necessity of inuring very young infants to endure the cold air, as essential to their health*, supported as it is by other popular writers, has been productive of great and extensive mischief.

That *pure* air is essential to the health and growth of chil-

dren, is too evident a proposition to require proof; and that from the open air of temperate quality, all children, even very young infants, derive great advantages, is daily manifested by their general healthy appearance, by the colour of their cheeks and lips, and by the firm feel imparted to their muscles. But a belief seems to obtain, that the more cold the temperature of the open air, so much the more pure and bracing will it prove. Now the contrary is rather the fact. It is the temperate quality, not the coldness of the air, which renders it pure and salubrious. Our coldest winds blow from the proverbially unsalutary north and east;* and during the prevalence of these winds, the most severe pulmonary affections, croups, sore throats, swelled glands, &c., continually occur; not only among children, but among adults likewise, who are much exposed to their influence.

It is rather extraordinary that we should be urged to expose our "young infants" to "very cold and other inclement weather," for the purpose of hardening them, as it is absurdly called, when we find from experience that the young of the "irrational creation" are injured by such exposure. The gardener, well knowing that "the tyrannous breathing of the north shakes all our buds from blowing," carefully preserves his young plants from the bleak weather; the good housewife secures her young broods of turkeys and other poultry; and the husbandman his tender calves and lambs from the cold and piercing winds: it is our children alone that we voluntarily expose to the chilling and inclement sky. Dr. Underwood, indeed, advises that the children should be properly clothed and attended to; this will moderate the evil, but will not cure it. Warm clothing alone is not sufficient to sustain the animal temperature; combined with exercise, indeed, it admirably answers this purpose, but very young infants are incapable of the necessary exercise; and, though warmly clad, soon suffer under the depressing effects of cold. Nor is this consequence of cold upon passive, quiescent subjects confined to infants. Those who drive or ride in open carriages, are

* Wind from the east
Is neither good for man nor beast.—*Old Proverb.*

usually clothed with as much care to exclude the cold, as the infants who are carried in their nurses' arms; but, notwithstanding, frequently suffer extremely from the degree of cold to which they are exposed; and why should children, who are less able to bear such effects of cold, be inured to that which even strong men and women cannot sustain with impunity?

True it is that some very robust infants endure the cold in a very remarkable manner, and these are often quoted as examples of the benefit to be expected from the hardening system; but a wise man will be cautious how he follows that as an example, which is mentioned only because it is extraordinary. The rules which are to guide our practice should be drawn from what is usual, not from what is uncommon; yet we are too often led away to imitate what is marvellous, and despise that which is more accordant with nature's laws and precepts. Thus, on the evidence of one strong, vigorous infant, the hardening system is applauded and adopted; and we neglect to inquire what numbers have sunk into the silent grave, in the vain attempt to render them, by exposure to the cold, equally vigorous and robust.—S. M.

LIGHT.

A light and cheerful apartment exercises great influence on the susceptible organization of infancy, and is among those constantly operating circumstances, which imperceptibly, but certainly, influence both their character and health. Light acts as a gentle and wholesome stimulus, and is scarcely less necessary for the animal than for the vegetable creation. Vegetables are blanched by the exclusion of light; and corn, growing under the shade of a tree, is paler, sicklier, and later in ripening, than if it stood in the open field. On man the operation of light is scarcely less striking. Deprived of its enlivening influence he becomes pale and sickly in appearance; his blood is imperfectly oxygenated, and a proneness to diseases of debility arises. Of these effects we may observe numerous examples in the narrow lanes and dark cellars of every large town, and in workmen of sedentary trades, and others rarely

exposed to the full light of day : in children we see the results in an aggravated degree. A dull and confined prospect also checks the active disposition of an infant ; which cannot feel dispirited, or gloomy, without suffering proportionably in its health and future development ; so that whether we regard its bodily strength or its mental character, we should be equally solicitous to procure for it a cheerful and enlivening prospect.

WARMTH.

Considering the sensibility of infants to cold, it is of paramount importance that the temperature of the nursery should be kept comfortably and equably warm, and as near the range of from 60 to 65 degrees of Fahrenheit as possible. In winter, currents of cold air may be guarded against, by placing a large screen behind the door. While, however, due care is taken to insure an adequate temperature, every approach to over heating must be scrupulously avoided. Too high a temperature induces an excitability of the nerves, and a relaxation of the system, which greatly favours the development of the irritative and convulsive diseases to which infants are so prone. Another important consideration is, the additional risk incurred by the transition into the cold external air, when taken out for exercise.

The author of the "Letters" observes, "there is a degree of temperature which would be incompatible with health, growth, and life. Yet young animals bear heat comparatively much better than older animals, and much better than cold. This is evident in regard to the human species, from the fact that children born under an Indian sun, do well during the first two or three years. They then begin to droop, and it becomes necessary to send them to breathe an European air.

Still the heat of a hot summer, and of heated rooms, is extremely injurious to infants, whom it exhausts by its oppressive effects on the sensations and on the respiration, and by inducing profuse transpiration.

But it requires still greater precaution to avoid cold than heat, generally speaking ; and we have more facts to bear upon this point, than upon the question of the effects of heat.

“ It frequently happens that the infant is affected with *coldness of the feet*, and, as a consequence, with severe *pain of the bowels*. The effectual remedy is to hold and press the feet continually with a warm hand.

“ When the infant is in pain, then let the feet be examined; if these be cold, it will frequently be found, that the pain of the bowels ceases as the temperature of the feet is restored.

“ But before pain is induced, coldness of the extremities begins to impair the functions of the bowels. Even in adult age, the stomach performs its office well or ill, according as the feet are warm or cold. But in infancy the circulation is feebler, especially at the extreme parts of the system, and, as a natural consequence, the temperature fails. The hand affords a constant *source* of heat. If your infant look unhappy or be in pain, examine its feet; if they be cold, warm them with the pressure of a warm hand; you will find it answer this pressure by pressing its little feet; its cry will be changed into the cooing before mentioned, the expression of happiness in early infancy.”

We proceed now to the second article under the head of the NON-NATURALS :—

MEAT AND DRINK,

Which is, indeed, worthy of ample discussion.

In the first place, it may be remarked, that when an infant is to be suckled by its own mother, it can rarely stand in need of food till the time when nature will bring milk into her breast, supposing the child be applied to it in proper time; which ought to be as soon as the mother is, by sleep or otherwise, sufficiently refreshed to undergo the fatigue that an attempt to suckle may occasion. This method, however unusual with some, is the most agreeable to nature,^{*} and to observation on the irrational species, which in many things are the very best guides we can follow.*

By putting the child early to the breast, especially the first

* This subject is largely and elegantly treated by Dr. Gregory, in his *Comparative View*, before quoted.

time of suckling, the nipple will be formed, and the milk gradually brought on; the breast will also be prevented from becoming too full and tense. If the infant is not applied to the breast before it is quite hard, the nipple will almost disappear from the stretching, and the infant will be prevented from sucking, by its nose pressing against the hard breast. But, by attention to these circumstances, much pain and its consequences will be prevented, as well as the frequency of sore nipples,* which in a first lying-in, have been wont to occasion no inconsiderable trouble; but should this, or even an abscess take place, they are both far less distressing, under proper management, than has been usually imagined;† and, what is of great importance, the latter is attended with a negative good: no woman, I believe, having been seized with puerperal fever who had a milk abscess.

["There are three cogent reasons for a mother being the nurse of her own infant: they are, that, in this manner, a troublesome state of the nipples, present inflammation, and future cancer of the breast, are best prevented.

"Generally speaking, the application of the infant to the breast is too tardy: some pretend that it should not be made until the third day; how those persons came to be so wise, it is difficult to say. Is nature usually so improvident—so wrong in her calculations? Do we observe that young animals of necessity pine for three days?

"If the infant be not early applied, the breast becomes swollen, and the nipple drawn in; and nursing becomes at

* It may be proper to notice in this place, that a colour is sometimes given to an infant's stools, from the blood it has swallowed, when the nipples of the suckling mother have continued to be very sore; a circumstance, indeed, that does not often occur, but it has given alarm for want of the true cause being understood. The stools in this case are of a strange blackish colour, very similar to the first stools of new-born infants.

† See the author's Surgical Tracts, in which the *milk abscess* and *sore nipples* are fully considered, and a successful and easy method of treatment pointed out.

From motives of benevolence, I beg leave to mention here a contrivance, which has succeeded far beyond every former device, for defending the nipples, and enabling women to nourish their own children, that I cannot but wish to extend its advantages by this public recommendation of the *nipple-shield*. It was contrived by Mrs. Relf, an intelligent monthly nurse, and is to be procured from any of the surgeon's instrument makers.

once painful and difficult to the mother, and a source of fretfulness to the infant. The swollen condition of the breast also frequently passes into inflammation, and this often issues in abscess

“Let the infant, then, be applied to the breast, as soon as the fatigue of labour is perfectly over, if its mother be doing well. Its mouth is softer than that of a nurse. The secretion of milk will be gently excited, and the milk secreted will be more easily removed. There will then be no *milk abscess*, no *milk fever*, in many cases, in which these must otherwise occur. The latter, as well as the former, is often the effect of the painful, tender, and tumid state of the *mammæ*.

“The other fact is also a result of experience. Those mothers who have suckled their own children have been far less subject to cancer, in later life, than those who have not done so.

“In recommending mothers to be nurses, it is important, however, to add the remark—that the breast, and the general health, and the infant, all suffer from lactation too long continued. The breast, the strength, and the secretion, become alike morbidly affected.”—*Letters*, p. 135, &c.]

But should the mother be unable to suckle, and a wet-nurse be engaged, it will be proper to put the child to the breast after it has taken a dose of opening medicine, which in such a case should be soon premised; or, if an attempt is to be made to bring it up by hand, a spoonful or two of thin water-gruel or barley-water, not too much sweetened, may be given, which will usually set it asleep, after which it will be ready for whatever culinary food shall be thought proper for it.

And on this article, a vast crowd of absurdities open upon us at once; and many of them with the sanction of custom and authority. I shall first advert to the thickness of the food; and it has, indeed, been matter of wonder, how the custom of stuffing new-born infants with thick food, whether made of bread or any other substance, could become so universal, or the idea enter the mind of a parent, that such heavy food could be fit for its nourishment. It would be well that all who are entrusted with the management of children, should have more just ideas of the manner in which we are nourished; and

especially, that it is not from the quantity, nor from the nutritious quality of the food, abstractedly considered. Every one, who gives due attention to the subject, may be led to conceive that our nourishment must necessarily arise from the use the stomach makes of the food it receives, which is to pass through such a change in digestion as renders it balsamic, and fit to renew the mass of blood which is daily wasted and consumed. An improper kind of food, or too great a quantity taken at a time, or too hastily, before the stomach has duly disposed of its former contents, prevents this work of digestion; and by making bad juices, weakens instead of strengthening the habit, and in the end produces worms, convulsions, rickets, scrofula, slow fevers, purging, and a fatal marasmus.

Nature, it should be considered, has provided milk alone for supporting the young of all mammiferous animals; and the milk of women is certainly amongst the thinnest of all, but at the same time far more nutritive than bread, and probably more so than other milk, as it contains a greater proportion of saccharine matter,* which is thought to be that principle in all our food which renders it nutritious. It is true, bread, as it requires more digestion, will remain longer in the stomach both of infants and adults; and hence, probably, because it satisfies the present cravings, it has been conceived to afford a greater proportion of nourishment; but bread, when mixed up wholly with water, as is frequently done, is far less nutritive than has been imagined. Children ought to be frequently

* MILK OF THE COW, ASS, WOMAN, GOAT, EWE.

Constituents,—	Cow	Ass	Woman	Goat	Ewe
Caseine	4.48	1.82	1.52	4.02	4.50
Butter	3.13	0.11	3.35	3.32	4.20
Sugar of Milk ..	4.77	6.08	6.50	5.28	5.00
Various Salts ..	0.60	0.34	0.45	0.58	0.68
Water	87.02	91.65	87.98	86.80	85.62
Total....	100.00	100.00	100.00	100.00	100.00
Solid Substances	12.98	8.35	12.02	13.20	14.38

The relative proportions of the constituents of milk vary with the quality of the food, the age of the animal, and the period after parturition.

Pereira on Diet.

hungry, and as often supplied with light food, of which milk is really the most nourishing that we are acquainted with. This could never be doubted but from its passing so quickly out of the stomach, on which account, indeed, though not the properest food for adults, employed at hard labour, and many hours from home, it is the fittest of all for the passive life of a tender infant, who cannot get the whole of that nutriture contained in bread, or other solid food, which the stomach of the adult is able to extract. Every thing the stomach cannot digest, may be justly considered as a poison; which, if not puked up, or very soon voided by stool, may occasion sickness, gripes, what are called inward fits, and all the train of bowel complaints, which may terminate in one or other of the evils just mentioned. And this is almost daily exemplified; new-born infants, after being so fed, and seemingly thriving for a short time, are often suddenly attacked with a dangerous purging, or carried off by fits.

Milk itself, like all the other animal juices, is produced from food taken in by the mother, and is the richest part of it. It is in her stomach that the aliment is digested, which, by a combination of powers in the chylopoëtic viscera, is so far animalized as to be converted into a kind of white blood, from which every animal body is daily recruited. And before an infant has acquired strength enough to convert solid food into this wholesome chyle, the parent, by this wise substitution in nature, has, in a great measure, previously accomplished this work for the infant she is to nourish. During infancy, therefore, both nature and reason must clearly point out the expediency of a milk diet.* Nature, who has prepared milk for the nourishment of infants, has at the same time provided an agent in the gastric juice for rendering a certain portion of it solid, and hence we are led to infer, that the conver-

* Whether the parent be able to suckle her own child, or that office be performed by a hired nurse, is not here particularly considered. The design is only to prove that milk is in general the most proper food for an infant. Whether that, indeed, be prepared by its own mother, a nurse, or by such animals as the cow or the ass, is equally to the purpose: where the former cannot be had, the best and most natural substitute should be provided.

sion into this form is an indispensable preliminary to the process of chymification and chylicification.

How long milk, as a diet, ought to be persevered in, or infants wholly confined to it, will be considered hereafter.

There is a period in life, indeed, to which this nutriment is more particularly adapted, both experience and theory demonstrating it to be more suitable to young people than adults, as Arbuthnot has remarked; and it has been observed, that it does not appear that the gastric juice of the cow will produce the same change upon milk, as that of the calf does, which is, therefore, constantly made use of in dairies, for separating the curd from the whey.

It can scarcely be improper, while discussing the article of suckling, to relate a recent instance, and a remarkable one out of many, as a proof of the degrees to which infants may pine for the breast, even to the great hazard of perishing for the want of it, where the real cause of the disease is not suspected. This little history will likewise further serve to illustrate the preference of human milk, which has been so strongly insisted upon.

The infant alluded to was very healthy when it was three months old, and was then weaned, on account of the illness of the nurse; but soon afterwards ceased to thrive, and had continual bowel complaints. At the age of nine months I was desired to visit it, and was informed that it slept very little, was almost incessantly crying, and had for many days brought up nearly all its food; it was become very rickety, and had the appearance of an infant almost starved. Trial had been made of every kind of food, except the breast, and the child had been many weeks under the care of an experienced apothecary; it was constantly in a state of purging, and seemed to have been just kept alive by art.

On the first sight of the child, and upon the face of this account, it was very evident that this infant was not nourished by the food it received, and that the complaint lay only in the first passages; but, reduced as it was, I had little expectation from medicines, and therefore gave as my opinion that either the child still pined for the breast, (in which case, I doubted not,

it would take it, though it had now been weaned six months,) or that it ought to be carried immediately into the country, and supported some time only upon asses' milk, or perhaps be fed now and then upon a little good broth.

My advice being taken, a good breast was procured, which the infant seized the moment it was put to it; and, after sucking sufficiently, soon fell asleep for several hours, waked without screaming, and took the breast again. It is sufficient to add, that the child ceased to puke or be purged; and, after sucking eight or nine months longer, became in the end a fine healthy child.

Although this instance had something extraordinary in it, in respect to the length of time the child had been taken from the breast; and though infants are generally completely weaned in six or seven days at the furthest; yet similar occurrences, differing only in degree, are occasionally met with; it being no uncommon thing for children, when ill, to take the breast again after seeming to be thoroughly weaned for three or four weeks. And this circumstance is the more worthy of notice, as it sometimes leads to a very fortunate result, and should induce us to make the trial whenever infants newly weaned may be seized with any complaint, under which a return to the breast may be desirable. Such, particularly, is the hooping-cough; under which I have known a child of more than a year old, and apparently thoroughly weaned for a month, take to the breast of a stranger very cheerfully, in the presence of its former nurse, with the precaution only of leading it to make the first attempts during the night. Such children for the few first days turn away from the new wet-nurse to the former one, as soon as they have satisfied themselves at the breast, and go back to the new nurse again very readily whenever they find an inclination to suck.

To return: I am free, then, to lay it down as an axiom, that milk ought to be the chief part of the diet of infants for a certain time, whether it be breast-milk or any other;* and that

* "In Italy, Holland, Turkey, and through the whole of the Levant, children are rarely allowed any other food than the breast-milk during the first year."—(Buffon.) And the savages in Canada suckle for four or five, and often six or seven

it alone will be sufficiently nourishing for nineteen out of twenty children; perhaps I might say ninety-nine out of a hundred. Exceptions, I believe, there may be, but these exceptions will be few in number; and fewer children would perish, if so fed, than are destroyed by rushing into the contrary extreme of feeding them with more viscid food.

The infant being established at the breast, some regularity should be observed as to the periods at which it is suckled, as, by leaving proper intervals, not only will the food be better digested, but the infant will have both the stimulus of the food which it takes, and the periodical habit to assist in the process. At first, the stomach will require but little food, and will be easily satisfied; therefore the intervals should be short; besides which, it is necessary, at first, to put the infant more frequently to the breast, as a remedy for the sufferings which the mother often endures from over distension; and as the milk is at this time more or less aperient, the bowels become an outlet for any superfluous quantity, and the infant will not suffer thereby. By degrees, the intervals should be lengthened, and by the end of the first month, a healthy infant ought only to be suckled at regular periods of three or four hours. By such a plan both mother and child will be benefited. The former will gain strength and become a more vigorous and healthy nurse, and the latter will be saved much of that fretfulness and continual crying which injudicious nursing invariably causes. Young mothers frequently entail upon themselves this trouble by considering every expression of uneasiness on the part of their infants as indicative of hunger, and immediately give them the breast, and thus increase the evil. Great care should be taken, also, that the infant does not remain too long at each time of suckling, as too large a quantity of proper food is as prejudicial to the health as a more moderate portion of unwholesome aliment. It is most desirable, particularly with delicate women, that the

years. In some extreme northern climates, (as hath been already remarked,) we know they can have no other food for a long time; and yet there the death of an infant is as rare an event as that of a suckling mother.

infant should not be nursed during the night. Give it its last meal at eleven o'clock, and it need not be again nursed until five in the morning. This may, at first, give a little trouble to the child's nurse, but by a short perseverance and great regularity, it is astonishing how soon a healthy infant will be found to awaken regularly during the day as the hour for its meal approaches, and to sleep well during the night. The advantage gained must be obvious. Both mother and child are refreshed by healthful sleep, and without weariness or exhaustion the mother is able to give a plentiful meal to the child in the morning, and is also better prepared to go through her duties for the day. To enable a mother to become a good suckling nurse, she must be kept in good health; and for this, a due portion of rest and sleep, and a plentiful supply of that nourishment which she has found by experience most suitable, are indispensable. She may, probably, have an increased appetite both for food and drink, which, with discretion, may be safely indulged. A moderate portion of beer or wine may be desirable, though many good nurses cannot take either, and find barley water or thin gruel answer every necessary purpose.

We have, hitherto, supposed the mother to be an efficient nurse, and the relative supply and demand to be well adjusted between herself and her infant; but we must now speak of those cases, not of unfrequent occurrence, in which this desirable state of things does not exist, and where it is necessary, long before it would be otherwise desirable, to use artificial means. The infant must not be allowed to want nourishment, and where that cannot be furnished wholly by the mother, the deficiency must be supplied by the best possible substitute. The first and best mode is, to employ a wet nurse in cases where no nourishment can be afforded by the mother; but if, by judicious management, she can be made available, even in part, it is always better so to do, and what is required in addition may be supplied by milk and water, or very fine panada. We have known several large families successfully reared under such circumstances. Grit gruel may be used one day and arrowroot the next, the former being somewhat aperient, the latter astrin-

gent. But, as we have before observed, it is better that the infant be wholly confined to the breast until after the sixth month, or, indeed, while it has a sucking mouth.

When an infant at the breast is always craving as soon as it is taken away, this generally is caused by the nurse's milk, and therefore, before allowing artificial food to be given, the quality and quantity of the milk, as well as the state of the nurse's health, should be ascertained, and the milk changed, if its quality be suspected. If it is deficient in quantity, its quality is always proportionably inferior. This occasionally occurs in consequence of the appearance of the catamenia, which now and then interferes with the well-doing of the infant. Under such circumstances, it will be advisable to change the nurse, or to anticipate the time of weaning. We may now consider the subject of protracted nursing.

The period of suckling is frequently one of the most healthy of a woman's life; in some, however, the reverse is the case, and the health becomes very much impaired, which, if not speedily attended to, will be followed by a succession of untoward symptoms, such as feebleness, hysteria, melancholia, and even mania. This may arise either from suckling carelessly and without regularity; from the original power or strength not being equal to the continual demand on the system; or from protracted nursing, than which I know nothing more hurtful, nothing whose effects are more difficult to treat successfully. In either case, although much may be done in the first variety by medicine, change of air, and sea bathing, yet the speediest and most effectual remedy is to wean the infant, and thus remove the cause.

ARTIFICIAL FEEDING, OR BRINGING UP BY HAND.

From what has been already stated regarding the feeding of infants, the bringing up an infant on artificial food, or by hand, as it is termed, can never be adopted as a matter of choice. Cases will occasionally occur, from circumstances which we need not here enumerate, where we are obliged to resort to this mode of feeding. It is, therefore, our duty to

select the kind of food which bears the nearest affinity to that which nature designed for infants.

Artificial feeding is at all times attended with risk to the life of the infant; for although some children thus reared live and have sound health, these are but exceptions to the general rule, while the examples of the evil consequences of attempting to bring up infants by hand are almost endless.

As milk is the proper food for infants, the next inquiry will be, what milk is the best for such as are brought up by hand? and what is the fittest instrument for feeding them with? Cows' milk we consider has a preference over all others, as being the most nourishing, and therefore the most proper. Some experienced men recommend asses', and others goats' milk, as excellent substitutes for the breast, and no doubt either may answer under certain circumstances. We believe that, in this climate, cows' milk diluted with tepid water, in the proportion of two-thirds of the former to one of the latter, is the best and most convenient. It is customary to sweeten it with sugar, because human milk contains more saccharine matter. Cows' milk, with the addition, then, of water and sugar, very nearly resembles the nourishment the Almighty intended for man, and is much preferable to all farinaceous aliments, which are liable to run into the acetous fermentation, from which the infant becomes distressed with flatulency and bowel complaints.

In giving milk as a diet, the following rules should be strictly observed:—

1. The milk must be as pure as can possibly be obtained, and given as soon as possible after it has been taken from the cow, especially in warm weather.

2. When practicable, it should be taken from the same cow, as cows differ in the quality as well as in the quantity of the milk they afford.

3. The food (milk, water, and sugar,) should only be mixed when about to be given, for it is much better to prepare fresh than to run the risk of its becoming sour.

4. The milk should never be heated over the fire; this should be done by adding the water that is intended for its

reduction *quite hot*, or it may be heated by the vessel containing it being immersed in hot water.

5. If the weather is unfavourable for keeping milk, it should be placed in the coolest possible situation, and kept in ice or cold water, which should be often changed.

6. Should the slightest tendency to acidity be observed in the milk it should be rejected, and no attempt should be made to correct it by the addition of an increased quantity of sugar, as this will but increase the evil.

Care should be taken that too much food is not forced upon the infant at any one time, for it is much better that it should be fed often than receive too much at once.

We have been better satisfied with this food, as well as mode of feeding (of which presently) than any other, both for infants brought up by hand, and as an additional food, where it has been required, for infants at the breast. East Indian women, for the most part, manage the artificial feeding of infants better than the other nurses that we have usually met with. They commonly boil and skim the milk. This has been recommended, also, by some medical practitioners to be done two or three times, to separate the albuminous film which then forms on the surface, and which is thought to be more indigestible than the curd. We question the necessity of this, for it is probable that this albumen does not exist uncombined, as a proximate principle of the milk from which it is separated, but appears as the result of the chemical agency of excessive heat. Were it otherwise, one boiling would certainly separate the whole other alimentary substances, which are not unfrequently employed as substitutes for milk, or in conjunction with it, such as gruel made from oatmeal, groats, pearl barley, rice, or arrow-root; the first three being more aperient, the latter more proper if the bowels are relaxed. The milk, in combination with the gruel, does not form so firm a coagulum, and is therefore said to be more digestible; moreover, from the nutritiousness of these aliments, less milk will be required. Other articles, as prepared barley, farinaceous food, biscuit-powder, rusks, tops and bottoms, and baked flour, may agree under ordinary circumstances, or, we may mix with the milk

a small quantity of light jelly made from hartshorn shavings, boiled in water to the consistence that veal broth acquires when it has stood to be cold.* The design of the jelly is obvious and rational, at once calculated to render the food more nutritive, as well as to correct in some measure the acescency of the milk; this quality being thought to abound in the milk of different animals, according to the nature of the vegetables on which they feed.† And the milk of quadrupeds we know is produced from vegetable juices only, whilst breast-milk is formed by a mixture of animal and vegetable food. A little Lisbon sugar may be added to this compound of jelly and milk, if the child be not inclined to a purging; or in that case a little loaf sugar; but the less of either the better. It will be proper to have the milk and jelly warmed separately, and no more at a time than may be wanted. With some infants cows' milk will not agree in any form; but the stomach will digest farinaceous gruels mixed with cream, perhaps in the proportion of two table-spoonfuls of cream to each half-pint of gruel. Others have recommended one part of fresh cream, mixed with five or six parts of water and a little sugar. Thin animal broths, made of mutton, chicken, veal, or beef, freed from fat, and mixed with an equal measure of any of the mucilaginous or farinaceous gruels, may be used, and will frequently agree where food with milk does not.

All these varieties of bread and farinaceous substances when made should be passed through a sieve.

Although we have said cows' milk is usually preferable to any other, asses' milk is considered by many more suitable, from its apparent greater approximation to human milk. It is doubtless extremely beneficial in many cases, more particularly in convalescence from diseases attended with an irritable and feeble

* There is sometimes a difficulty in making this jelly, on account of the hartshorn being bad; those who shave it, often mixing the shavings of trotters, which may, however, be distinguished by their brittleness. If the shavings are good, two ounces of them, boiled very slowly in a quart of water to a pint, will make the jelly of a proper consistence.

† See Dr. Young, "*De Natura et Usu Lactis, in Diversis Animalibus.*"

state of the digestive organs ; but as a substitute for the breast-milk in early infancy, we have been very much disappointed in it ; for it has usually been so aperient that even when tried under the most favourable circumstances we have been obliged to give it up. Goats' milk we have seen used in hot climates where cows' milk was scarce, but never as a substitute for the breast. In one instance in England where it was so given, the infant throve well, but became puffy, and was always costive, and the motions were in the form of hard white balls. After a trial of two months, asses' milk was substituted, which agreed better ; subsequently cows' milk was given, and the boy is now a fine healthy fellow.

As to the *quantity* of food that should be taken at a meal, we believe that if an infant in health were left to its own inclination and appetite, rather than to the discretion of the nurse, it would rarely err to any great extent ; no particular regulation of the quantity of the mother's milk appears necessary, and there is no sufficient evidence of the necessity of greater restrictions being required, when the infant is fed from any other sucking apparatus. Nurses, however, and many parents, fancying that an infant can cry from no other cause than hunger, apply under such circumstances the nipple or sucking-bottle to its mouth, until by these importunities, amounting to positive teasing, the infant sucks as the lesser evil. It must be with infants as it is with adults ; they vary in the extent of their appetite, and in the vigour of their digestion. Much then, after all, must be left to the discretion of the nurse ; but when the infant withdraws its mouth from the bottle, and shows little disposition to resume its work, after once being solicited by the nurse, it will be a good general rule to conclude that it has taken as much as its constitution demands or its appetite inclines to, and no means should after this be adopted to force it against its desires. In some instances an infant will gorge itself until its stomach is incapable of holding more, and rejects the superfluity by an action more allied to regurgitation than vomiting, being without that peculiar effort called retching. The stomach being thus relieved, the nurse will again present the bottle, and the infant will take what is

offered, until it presents the same unequivocal evidence of repletion. This can only be rectified by observing how long it can suck vigorously, or what quantity it can take without this kind of vomiting. Each meal can then be gradually diminished until the evil disappears. Although the precise quantity of each meal cannot be defined with accuracy in individual instances, there is still an average quantity which will agree with the majority of infants, and it will be an approximation to the truth to estimate this at about four ounces for an infant under six months old, increasing gradually to six, or, at the utmost, eight ounces, as the infant advances towards ten or twelve months.

As to the *frequency*, the same rules will apply which were given for infants at the breast. The interval between meals may be gradually prolonged from one to four hours; and the infant should be encouraged to sleep quietly for a longer interval still during the night. The habit of plying an infant constantly with food is often but an apology for idleness, the attendant having recourse to it as a solace and amusement to the child upon all occasions, and, too commonly, to the exclusion of that healthful exercise which a judicious and active nurse will give, and which alike promotes the appetite and invigorates the digestion.

The *mode* in which the infant is fed is of considerable importance. The nurse's bottle is of all others the best substitute for the breast, and is very simple and convenient. It consists of a flat glass bottle of an oval shape, holding about six or eight ounces; at one end is the neck, shaped somewhat in the form of a nipple, through which is a small perforation incapable of admitting thick fluids to pass; and, consequently, no food beyond a given degree of consistence can be taken by the child. Over the neck is to be *firmly attached* a prepared heifer's teat, or a piece of chamois leather, or vellum, or parchment, made in the form of a nipple, the extremity of which should not extend above half or three quarters of an inch beyond the neck of the bottle; for if it projects more than this, the infant will get the sides of the teat so firmly pressed together between its gums that there will be no

space for the milk to pass through. Some recommend a conical piece of sponge to be inclosed in the teat or leather. The teat should be changed daily, and the one not in use, after being well washed, must be kept in proof spirits, and should be well steeped in tepid water before it be used again. In the prepared teat, the manufacturer leaves a sufficient aperture at the end for the food to pass through. If other materials are used, the ends should be pierced, with several small holes at the end, by means of a needle; a supply should be kept for changing, and the teats not in use should be carefully washed and dried. Fine cork is also an excellent material for teats; while a silver nipple, nicely adjusted in form and size to the shape of the lips, has the advantage of being easily kept clean. The bottle should be kept scrupulously clean, and emptied and washed out after each meal. To ensure this, the nursery should be provided with a second bottle.

This mode of feeding resembles the process of nature as nearly as possible; for from the similarity of the teat to the nipple, and the milk coming slowly into the mouth, (which can be regulated if required by placing the thumb over the large aperture,) the infant is obliged to use some little degree of exertion to obtain the quantity it requires, and the suction employed stimulates the salivary glands to an increased secretion, and secures the intimate mixture of a due quantity of saliva with the food, a highly important point in digestion.

This manner of feeding is not only pleasant to the infant, but very convenient to the nurse, and the food can be equally at hand in the night as the day, water being easily heated by a lamp. The only objection I have known by those who have tried this mode, is that which I esteem one of its highest recommendations, namely, that infants thus fed are frequently hungry; that is, they are what nature intended them to be; this food sitting light on the stomach, and being easily digested like the breast-milk.

A popular objection to the plan of feeding children here recommended is sometimes made, namely, that children who have been brought up by hand from the birth, and fed with

thick bread victuals all the day long, are sometimes found very strong and robust, whilst we every now and then see others, who have been debarred from that sort of diet, remain weak and tender till they become a year or two old. Setting aside the consideration that this objection militates equally against children living on the breast, though that is the food nature has designed for them, it will be sufficient to say, that it is only strong children, who may be bred up almost anywise, that can at all digest thick victuals; that there are others who cannot endure the least thickening in their food, nor any kind of bread; and that weakly infants, who are scarcely preserved by the most careful attention to their food, would be soon hurried out of the world if that attention were withheld. And this reminds me of an observation of a very judicious friend in the north of England, which greatly surprised me at the time, as I had never met with any observation from him before, the propriety of which was not exceedingly obvious and convincing. Upon seeing one day a number of fine children, he with some shrewdness observed, that we did not seem to have so many weakly half-starved children in the streets of London, as he met with in the country, and that he had often before made the like observation in his journeys to town. It appeared to me that my friend must lie under some mistake, and I accordingly mentioned my surprise at such a remark coming from him; when he removed my astonishment by insisting on the fact, with the following obvious solution to it:—"I apprehend," says he, "there are scarcely any but fine and strong children in London, who live to be two or three years old, the weaker ones, for want of good air and exercise, sinking under their infirmities: while the tenderest children in the country, by being turned out to crawl in the wholesome open air, or by sitting at the door almost all the day, escape the fatality of your gross air and hot nurseries, and survive the trying periods of infancy, though some of them remain weak and rickety till they become old enough to endure severe exercise, which can alone strengthen them effectually."

I have no doubt of there being certain exceptions to the

rule of feeding I have recommended, that are worthy of some attention, although very few have actually come to my knowledge, and though I am persuaded, that, as a general plan, it is both a natural and salutary one. Instances may be met with, however, of some very athletic children who may require a more nourishing and perhaps somewhat more solid diet; and the state of the bowels in others, will call for a greater variety of food, and that of a kind not calculated to be administered in the mode here recommended. On these accounts, I would offer another observation or two in regard to the thicker kind of victuals; and first, that in families accustomed to bring up their children by the spoon, I think I have found a greater number of infants well nourished by the French or the Uxbridge roll, boiled in water to a jelly, and afterwards diluted with milk, than on any other kind of pap. From such families I have likewise learned, that some change in the food is likewise necessary, and will be indicated by the degree of relish which the infant may discover towards different kinds of food, as well as by their effects on the bowels; though the child be not supposed to be at such times really unwell: such changes principally respect the different kinds of bread, or other farinaceous substance usually mixed with milk; and sometimes the substitution of broth, for a few days, in the place of the latter.

I may further add, that infants should not be fed lying on their backs, but in a reclined position; in this manner they will swallow their food more comfortably, and it will be more readily ascertained when they have had enough. In suckling, as well as feeding, the infant should be withdrawn from time to time, especially after waking from sleep; the stomach is thereby saved from much undue labour, and is better enabled to retain what it has received. In both cases also, after the meal has been taken, the infant should be left to repose.

M. Le Febvre de Villebrune detracts from the advantage of this mode of feeding, by observing that infants may be fed as slowly and cautiously by the spoon: but this is one of

the things in which servants cannot be depended upon, (at least I have not met with many who could,)* nor will children, indeed, oftentimes endure slow feeding, if they can anywise prevent it, but will be screaming all the while, instead of being kept quiet by their food; though the hope of quieting them is frequently the nurse's sole motive for giving it. But, when an infant can get it only slowly from the bottle, and yet is itself all the while employed in the business, it will be agreeably diverted while it is acquiring its nourishment, in the same manner that it is amused at the breast.

When the infant has attained the age of six or seven months, the teeth usually begin to appear, indicating the increased power of the digestive organs; we should now, therefore, follow the dictates of nature, and gradually give more solid food. For example, bread, tops and bottoms steeped in boiling water, and beaten through a sieve, and mixed with a due portion of milk, to which may be added a little sugar. As time wears on the child may be fed with a spoon; and beef-tea or other animal broth mixed with panada, or finely-crumbed bread may be given for dinner; and as its strength and circumstances indicate, a little bread and milk may be allowed morning and evening.

Two excellent kinds of food for infants are sago, thoroughly boiled in very weak beef-tea, with the addition of a little milk, and Leman's rusks, called tops and bottoms, soaked in boiled milk. The former of these has rather a tendency to confine the bowels, the latter to open them; they may be mixed together in such proportions as effectually to regulate the bowels.—M. H.

A crust of bread likewise, as soon as the child has a couple of teeth, will amuse and nourish it, whilst it will assist the

* Amongst the exceptions was a nurse, who said, "I always let my children ask for their food:" which she pertinently explained by saying, "I do not feed the infants because they cry; but if, after fasting a reasonable time, they begin to moan, I endeavour to amuse them till they anxiously hunt about them, and repeatedly form their lips in a certain way, that assures me it is a want of food only that makes them complain."

cutting of the rest, as well as carry down a certain quantity of saliva, a secretion too precious to be lost when the digestive powers are to be further employed.

As the child grows older, to broth may be added light puddings, made of bread, semolina, tapioca, or rice.

To feed an infant on veal, chicken, or other animal food, before nature has given it teeth enough to chew, however small it may be minced in the kitchen, is altogether unnatural, and shows a total disregard to the plain indications of nature, in withholding such teeth till the system requires their assistance to masticate solid food. It is by degrees only that children ought to be brought to such food, which at a certain period, indeed, is as necessary as a lighter diet at an earlier age. But as so many infants fall a sacrifice to the use of indigestible food under the age of twelve months, being carried off by vomiting, purging, or fits, too much caution cannot be used with regard to their diet.*

The practice of giving solid food to a toothless child is not less absurd than to expect corn to be ground where there is no apparatus for grinding it. That which would be considered as an evidence of insanity in the latter instance is defended and practised in the former.

If, on the other hand, to obviate this evil the solid matter, whether animal or vegetable, be previously broken into small

* From a note in Dr. Smith's letters, it appears, that the average of births annually, within the bills of mortality, for ten successive years, was 16,283; out of which were buried, under five years of age, 10,145, and from amongst these 7,987 were under two years. So that almost two-thirds of the children born in London and its environs, become lost to society, and more than three-fourths of these die under two years of age. This proves how hazardous a period that of infancy is in this country; and I am sorry there is much reason to be persuaded, that want of air, exercise, and a proper diet, has added, unnecessarily, to its dangers; there being no such mortality in barbarous nations, whose inhabitants live in a state of nature; nor in any part of the known world, amongst other young animals. Although these, and other calculations, I have seen, should be found ever so accurate, it is a pleasant reflection, (to whatsoever circumstances may be owing,) that, since the time they were taken, the proportion of deaths at the early period alluded to, has been very considerably decreasing; and the writer has noticed, that for some years the average of deaths, according to these bills, has not been more than six in sixteen; which is but little more than one-third.

masses, the infant will instantly swallow it, but it will be unmix'd with saliva, and will not be digested; yet in every day's observation it will be seen, that young children are so fed, even in their most tender age, and thus not only are present evils produced, but the foundation is laid for future disease.

The diet before mentioned may be continued until the second year, or until the first molares or grinding teeth have protruded through the gums, after which the child may have bread and butter for breakfast and supper, and drink the milk, which is preferable to bread soaked in milk, as it exercises the powers of mastication, and facilitates the transition of the remaining teeth. With this, thin broth, or light farinaceous pudding may be given for dinner. When all the cuspidate or canine teeth are cut, the child may have solid animal food, and not before, and then only in small quantities, and but once a day.

The animal food given to children should be plainly roasted or boiled, and may be either hot or cold; but fried meats, and all food cooked a second time, by hashing or stewing, are less digestible, and should be avoided. The giving animal food more frequently, with the mistaken hope of strengthening weakly children, will be found not only erroneous, but very likely to add to the debility. Water, simple, or with toasted bread, milk and water, or rennet whey, may be used as most appropriate drinks for children, and they require no other.

Some parents, however, run into error by keeping their children too long upon a fluid or too slender diet, by which their bellies and joints become enlarged, and the bones of the lower extremities too weak to support them at an age when they require more exercise than their nurses can give them; and some most desirous of doing right fall into a like mistake, even with regard to older children, by keeping them too low, and allowing animal food only every other day to those of four or five years of age, which, except in very particular habits, is wrong, and in this damp climate disposes children to scrofula.

Before I close this head of the management of children,

perhaps the most important of all, I shall point out the most suitable diet under the different complaints to which they are peculiarly liable. This, indeed, will in some measure be done in speaking of the different diseases, but it may be proper to observe, that as light a diet as possible is called for when a child is unwell, let the disorder be almost whatever it may. If a fever should accompany it, the child will require still less food than in any other complaint, but plenty of drink, which may be so calculated as to furnish nearly, or quite as much nourishment as the infant will require, and may generally, if the child prefers it, be given cold. Such are barley-water, in which a crust of bread has been boiled, and thin tapioca: or if purging attends, rice, or arrow-root water; and a drink made of hartshorn shavings, with a little baked flour in it. In purgings, as more nourishment is required to support the child than under most other complaints, (if not attended with fever,) baked flour mixed up with boiled milk is admirably calculated both as a proper diet and medicine. For the like complaint, arrow-root, or rice gruel, or the food directed by Dr. Smith, is very well adapted, and will afford a little variety. He orders a table-spoonful of ground rice to be boiled with a little cinnamon, in half a pint of water, till the water is nearly consumed; a pint of milk is then to be added to it, and the whole to simmer for five minutes; it is afterwards to be strained through a lawn sieve, and made palatable with a little sugar. In this way, or joined with arrow-root, milk may generally be made to agree perfectly well, even when the bowels are purged; and when it does so, it proves exceedingly nourishing. Should it chance to disagree, owing to the great acidity of the first passages, good beef-broth ought to be made trial of, which may be thickened with baked flour, instead of bread, or mixed with an equal quantity of thick gruel, and makes a very pleasant, as well as anti-acrescent diet. Likewise the patent sago, properly boiled, adding to every half pint a large tea-spoonful of red port wine, for the use of infants of a week old; cautiously increasing the quantity of wine, as they grow older. A large family of children, whose bowels had been continually disordered by various other food,

has been brought up by this, which was persevered in till they had four or more teeth, and were able to partake of pudding and other common food. Young children in this country so seldom tasting wine, it may seem strange to advise it for infants in the month; but will be recollected by some readers, that the practice is very different in wine countries, where it is often exhibited as well for food as medicine; and is one of the best cordials for infants, as I have experienced in various instances.

Perhaps much more has been said on this subject of acidity by some writers, than really ought to have been; or it may at least be suspected, that a proper attention has not been paid to the peculiar circumstances of infants, who are all much disposed to it. Acidity, when injurious, is probably oftentimes rather an effect than the first cause of the disorders of infants. It seems, indeed, to be natural to them, arising alike from the weakness of their organs of digestion, and the nature of their food; though there is no doubt that their complaints are afterwards aggravated by an abounding acid, or rather, probably, from this natural acid becoming morbidly acrid, through over-feeding, and other errors in their diet, or from its being accidentally confined in the first passages. Nature, however, seems to have designed the food of infants to be acescent; and till the body be disordered, and digestion impaired from one cause or other, this quality of their food is not likely to be very injurious to them: and probably is far less so, in a general way, than food of a very alkaline nature would be, with a like weak digestion.

Flatulence and griping more commonly arise from an undue quantity of food, or from the food being too thick in consistence, or too large a portion of sugar being used with it, which passing down undigested into the bowels, they are thus irritated and disturbed. This may be cured by abstinence alone. The same state of things may be caused by food not being prepared fresh at every meal, or even from the nursing-bottle or vessel in which the food is prepared not having been perfectly clean, matters which should be carefully looked after. Where children are much troubled with wind, it has been

recommended to mix some carminative seeds, or the waters distilled from them, with their food, such as sweet fennel, or cardamom, or carraway seeds, bruised very fine; or more commonly the *aq. anethi*, as being more convenient, has been given. We entirely agree with Dr. Merriman, who says, "The practice of mixing spices and carminatives with the food of infants and young children (among the lower classes in London, common gin is the carminative always used) is very objectionable; on no account more, than that it soon begets a habit of giving, every day and at every meal, hot and stimulating food. The more simple and plain the diet of children is made, the more will it conduce to establish and maintain good health. Spiced or spirituous food produces an uneasy sensation at the stomach, and great thirst; this occasions the child to cry, and to quiet it more food is given, which it swallows with avidity on account of its thirstiness, and thus much more is received into the stomach than can be properly digested and converted into nourishment.

"Whatever of cordials or carminatives children may occasionally require, should be given medicinally; and, in my opinion, it is always right to give every kind of medicine distinct from the food."

Dr. Marshall Hall advises in these cases a dose of magnesia, to be given over night, and made operative, if required, by a lavement the next morning. This will render carminatives unnecessary, and secure the little patient not only from colics, but from more serious and dangerous evils.

The warm water injection must henceforth rank amongst the most important of our remedies for infants and children. It should be administered whenever the infant's bowels are not fully relieved by half an hour after breakfast. In this way a regular state of the bowels is secured, the morbid effects—wind, and a thousand others of a loaded bowel, are prevented, and the child is kept in health. As a remedy, it is not less efficacious: it has often restored the due secretions of bile, &c., when calomel itself had failed.

The proper mode of securing the full effect of the injection is to give a mild aperient over night; this brings the alvine

matters into the last intestine, their natural reservoir; and this is, in its turn, relieved by the lavement.

Children, however, become less subject to wind and hurtful acidities as they grow older, and the stomach gets stronger, as it is called. But should these complaints, notwithstanding, continue obstinate, a little fine powder of camomile flowers, or a few drops of *tinctura calumbæ*, mixed in water, and warmed with a little ginger, will prove exceedingly bracing to the stomach and bowels, and render them less disposed to acidity. Exercise also, according to the age and strength, is a grand preventive and remedy; and especially making infants break wind after sucking or feeding. And this may generally be effected, as every one knows, by raising the infant up, and gently tapping it on the back, or rubbing its stomach before it be laid in the cradle to sleep.

I have only to add, that when through an abundant acid milk is frequently thrown up curdled, a little prepared oyster-shell powder, or lime-water, may be added to it; about a scruple of the former, or a teaspoonful of the latter, to half a pint of food. When diarrhœa prevails, or, indeed, under other circumstances, a piece of burnt bread may be put in the milk. Some children cannot bear sugar in any form, and in such cases salt may be substituted with benefit.

It will be proper to include under this head, some observations relating to wet-nurses, and to weaning.

ON THE CHOICE OF WET-NURSES.

The first and essential point in a wet-nurse is, doubtless, that her milk be good; to which end it is necessary that she be healthy and young; not of weak nerves; nor disposed to menstruate while she gives suck: and that her bowels be regular. Her nipples should be small, but not short, and the breast prominent, and rather oblong than large; the large fleshy breasts being distended rather from fat, than from milk. The chief marks of good milk, are its being thin, of a bluish

colour, rather sweet, and in great quantity. It should flow freely, on moderate pressure, and when allowed to stand, it should throw up a good portion of cream, after sleep. A wet-nurse between twenty-two and thirty years of age is to be preferred; and it is desirable also that she should have had a child before, as her capability of suckling will be proved, and she will have had some experience in the management of a child.

Having examined the mother, we should look to the condition of the infant, which should, by its appearance, give evidence of being healthy and well nourished. Its flesh should be firm, its skin clear, and free from eruption, particularly about the head, neck, and buttocks; and further, its mouth must be perfectly clean, and free from aphthæ. Should the wet-nurse's milk be somewhat older than the infant she is engaged to suckle; if, for instance, the woman has been confined two months, and the infant is only a day or two old, it is advisable that she take a mild saline aperient once or twice.

If the milk is under four months' old, it is, doubtless, an advantage: and certainly for a young child it ought not to exceed six months; for after this time it generally becomes too thick for a new born infant, and is not easily digested. On this account, though an infant may not be really ill, I have frequently observed it not to thrive, though it take great plenty of such milk. When the milk is of this age, there is also a greater chance of its failing before the infant be of a proper age to be weaned.

[Some ladies are very anxious to procure wet-nurses who have not lain in more than a fortnight or three weeks. I have seldom found the milk of such nurses answer so well as those whose children are eight or ten weeks old. They are not sufficiently recovered from the effects of parturition to undertake the duties generally required of a wet-nurse.—S. M.]

A wet-nurse ought furthermore to have good teeth, at least her gums should be sound, and of a florid colour. She must be perfectly sober, and rather averse from strong liquors;

which young and healthy people seldom need in order to their having plenty of milk. She should be cleanly in her person, good-tempered, careful, fond of children, and watchful in the night, or at least not liable to suffer in her health from being robbed of her sleep.

The diet proper for wet-nurses is likewise worthy of notice. And here, an invariable attention should be paid to natural constitution and habit.

Any change which it may be necessary to make should be gradual. It is very erroneous to suppose that women, when suckling, require to be more highly fed than at other times; indeed, the quantity that many eat and drink, and the indolent life they lead, derange their digestion, and frequently induce a state of febrile excitement, which always diminishes, and, sometimes, altogether disperses the milk. It will be necessary, therefore, to guard against the nurse overloading her stomach. She should live, as much as possible, in her accustomed manner. She should have a wholesome mixed diet of animal and vegetable food, and a moderate, but somewhat extra, quantity of malt liquor, say from one to two pints daily. Should she require more drink, let her have barley-water, or thin gruel. Respecting vegetables, particularly, the strictest regard should be had to constitution and habit. Wherever vegetables, or even acids, uniformly agree with the suckling parent or nurse, I believe healthy children will rarely suffer by partaking of them; but, on the contrary, the milk being thereby rendered thin and cooling, will prove more nourishing and salutary, in consequence of being easier of digestion. To these regulations should be added an attention to exercise, and frequent walks in the open air: to these, hired wet-nurses have been previously accustomed, and are therefore sure to suffer by confinement to warm rooms, equally to the injury of their own health, and of the infants they suckle. They may perform, too, any ordinary domestic offices.

I shall close these general directions with the following, from Struve, in a view rather to suckling parents of a delicate constitution, than hired wet-nurses. "Let two parts of milk rise over a gentle fire; and add one part of well fermented beer,

previously boiled. This beverage is to be taken cold ; and has been attended with the greatest advantage by women who were already so exhausted, that they thought it impossible to continue suckling their children ; they became replenished in a short time, and recovered their strength, with a continued increase of milk."—*Struve on the Education and Treatment of Children.*

[“ In reference to the nurse, I would advise, in all cases, that doses of magnesia should be taken from time to time. The milk, as well as the infant, is frequently preserved healthy by this simple means. And in regard to the nurse-maid, I should always insist that she should take a bath, or sponge the surface of the body with warm water frequently. The infant is thus preserved from inhaling a morbid perspiration.”—*Letters*, p. 114.]

ON WEANING OF INFANTS.

A principal article under this head, is the age at which it should take place ; and this will depend greatly upon attending circumstances. A child ought to be in good health, especially in regard to its bowels ; and ought first to have cut, at least, four of its teeth, unless that process should commence unusually late. This generally takes place between the seventh and twelfth month ; and it may be observed that healthy women, who suckle their own children, and take proper exercise, do not usually become pregnant till after nine months, and this, I conceive, may be considered as one intimation of the properest period. We shall not be very wide, therefore, of the order of nature, if we say that children in general ought not to be weaned earlier than this ; making proper allowances, however, for all just exceptions to general rules,* and especially as far as teething may be concerned. The period at which the incisor teeth are cut varies much in individual instances. Some infants, it is well known, have been born with teeth ; others

* Astruc advises children to be suckled till they are two years old, but without giving any sufficient reasons.

have the incisors before the completion of the fourth month, while others, especially pallid, exsanguineous children, of feeble and torpid habits, may be twelve or fourteen months without a tooth. Although this early or late appearance of the teeth may, to a certain extent, modify our decision with regard to the length of time that a child should live at the breast, yet it is a good general rule to persist in this more natural mode of rearing, upon an average, full nine months; and in those languid habits in which the appearance of the teeth is late, and very apt to be attended with disturbance of many important functions, it is better to act on the safe side, and to continue this simple, unirritating diet for a longer period than usual, rather than to be precipitate in our determination to wean. Small and weakly infants, if rather feeble than ill, are sometimes benefited by being weaned; they should, therefore, about this age, be taken from the breast, instead of being, on account of weakness, nourished much longer in that way; a cautious trial of such a change should, at least in most instances, be made. The general time of weaning infants, then, should be that indicated by nature having furnished them with the means of taking more solid food. We cannot, therefore, do better than recommend an observance of the rules laid down for feeding infants who have cut the incisor teeth, and by which any abrupt transition will be avoided. I have seen many mothers needlessly torturing themselves with the fear of their children being weaned with difficulty, because they could not get them to feed when eight or ten months old, and still at the breast; but I have always found such children wean, and feed, just as well as others, when once wholly taken from it. I never have any fear in that respect, and therefore wish to counteract, if possible, a sentiment encouraged by several writers, which has, I believe, no real foundation in fact, but has too often been productive both of much inconvenience and mischief. I do not by this intend to say, that a child of eight months old would be injured by a little food, once a day, of a more solid nature than the breast-milk: indeed, at that age children are often benefited by it, as I have intimated before; but when children are weaned much earlier, and are fed almost from the

birth merely with that view (which is often the case), they may be essentially injured by it.

The objections to immediate weaning, which have been brought forward, have arisen, I am persuaded, from fallacious reasonings, and not from facts and experience. I have lived, as it were, in the nursery for many years, and never found any ill effects from the sudden transition from breast-milk to artificial food when properly chosen;* and as long as I shall continue the pupil of nature, I shall hearken to no argument in favour of adding a less adapted nutriment to that which nature has provided, in order to obviate possible injurious consequences, the existence of which I do not think to have been confirmed by facts.

I have remarked, that infants who are indisposed to feed at all while at the breast, are, nevertheless, weaned and feed just as well as others, when once taken wholly from it. There is, however, in a few children, a little difficulty for the first two or three days under any circumstances; but it is remarkable, that the instance attended with the greatest aversion to common food that I ever witnessed, was in an infant who had been allowed a little chicken broth once a day for two months before the weaning was entered upon. The child was very healthy, slept well, and scarcely cried at all upon its being deprived of the breast, and yet would not receive the food it had been accustomed to; so that for six-and-thirty hours it continued averse from every thing that was offered to it, though it appeared in very good humour. After the second day, however, it took a moderate breakfast, and in a little time it fed as readily as other weaned children.

Under these circumstances, if the weaning has been committed to the wet-nurse, or she be still in the house, it will be proper that strict inquiry be made, and the nurse watched; there being instances of such hankering after the breast being kept up, by her occasionally indulging the child in that way. It may be further observed, that if the infant be in the least

* Were weaned infants to be immediately crammed with animal food, it might, indeed, bear some analogy to adult persons with dyspepsy, "being all at once forced to live upon Cheshire cheese."

degree costive, a little magnesia and rhubarb should be administered, which, besides opening the bowels, will tend to create an appetite. Such infants also, where there are more young children in the family, should sit at table with them when taking their meals; as they will thereby, through mere imitation, be disposed to take food.

When the weaning is once entered upon, a great part of their food ought still to be of milk, with puddings, broths, &c., as detailed under the head of artificial feeding; and every kind of food, and even drink, should be prohibited in the night, even from the first, supposing them to be weaned at a proper age. The mere giving them drink, even only for a few nights, creates the pain and trouble of two weanings instead of one; and if it be continued much longer, it not only breaks the rest, but the child will acquire a habit of being fond of drinking; the consequences of which are very often a large belly, weak bowels, general debility, lax joints, and all the symptoms of rickets. The only need is, that the last feeding be just before the nurse goes to bed, which may generally be done without waking the child; and while it seems to enjoy this sleepy meal, it affords a most pleasant employment to the mother, or nurse, in observing how greedily the child takes its food, and how satisfied it will lie for many hours on the strength of this meal.

It is of the greatest importance to regulate the quantity and quality of the food at this time. If too much food is given (and this is the great danger) the stomach will be overloaded; and if the infant is not carried off suddenly by convulsions, its bowels will be obstinately disordered, it will fall away, from not being nourished, and perhaps be sacrificed to the over-anxious desire of the parents and friends to promote its welfare. Rightly managed, the child soon becomes reconciled to the change, and resumes its wonted cheerfulness.

SLEEP AND WATCHING.

A few observations only on this subject will be necessary in this place; and first, that healthy children sleep a great deal for the first three or four days after they are born, probably

from having been previously accustomed to it. They ought not, however, to be suffered to continue this habit in the day-time to the degree some children are permitted, but should be gradually broken of it; and, indeed, if not indulged, they will not be so much disposed to sleep as is generally imagined, and will, therefore, take more rest in the night, which is mutually beneficial to the child and the mother; who, especially if she suckle, will be less disturbed, at a time when she particularly requires the refreshment of sleep. Therefore, when infants are sleepless in the night, they should be kept more awake, and have as much exercise as possible in the day time, which, though they be ever so young, may be pretty considerable, (as will be directed more at large in its place,) by playing with them or dandling on the knee and otherwise amusing them; and when older, by every kind of exercise they can bear. The child, if healthy, will soon contract a habit of being very much awake while it is light, through that lively and restless spirit peculiar to infancy; and by this means another evil will be very much avoided, that of often laying a child down to sleep in the day time for hours together, loaded with a thick dress, and covered besides with heavy clothes, in a soft cradle, or bed.

As the senses become more and more capable of bearing external impressions, and the ideas more developed, the waking intervals will be gradually prolonged, and after some time the chief portion of sleep will be taken during the night.

For the first month an infant should sleep with its mother or nurse, at the expiration of which time, or shortly after, especially when the weather is warm, the infant, if healthy, had better sleep by itself. A sufficiency of bed-clothes should be used, and the temperature of the room, during the first few months, should not be allowed to fall below 60°F. Although warmth is of signal importance to an infant, we must be equally careful to admit pure air freely to its mouth, which should also be strictly attended to, while sleeping with its mother. In very cold weather, or with a delicate infant where the circulation is languid, and accompanied with a very pale or dark blue skin, it should sleep a longer time with its parent.

The custom of placing infants on the back, whether in the

cradle or bed, is very improper; for by this means the superfluous humour secreted in the mouth—which, in the time of teething especially, is very considerable—cannot be freely discharged, and must pass into the stomach, where its abundance creates various disorders. Infants should therefore be always laid on their side, as the most favourable position for the flowing of saliva and other matters from the mouth.

In regulating the periods for sleep, as in other things, we should not forget the periodical plan almost universally adopted by Nature; and by a little training, or rather by permitting her to work without disturbance, the nurse will be saved many a sleepless night. Matters should be arranged in the nursery, so that no obstacle shall be in the way of the infant's sleeping, about the middle of the day, an hour or two before it is time for dinner; it will thus be again sufficiently tired in the evening to ensure its sleeping soundly from seven or eight o'clock until the following morning. Whereas, if we defer its mid-day rest to a later hour in the day, its night's sleep will not commence so early, and (the infant being less fatigued) it will probably be interrupted before morning. It will be fitting here to say something of the cradle, which most writers have spoken against.

I believe there is no doubt but the custom of laying down children awake, and rocking them in a cradle in the day-time, or at seven or eight o'clock in the evening, when they are to go into their night's sleep, as it is called, may be an occasion of making them more wakeful in the night; or at least may cause them to expect that kind of motion whenever they awake. But yet I cannot help thinking, there is something so truly natural, as well as pleasant, in the wavy motion of a cradle, (when made use of at proper times,) and so like what all children are used to before they are born, (being then suspended, and accustomed to ride, as it were, or be gently swung in a soft fluid, upon every motion of the mother, and even during her sleep from the effects of respiration,) that, always wishing to follow nature as I do, I cannot, on the whole, but give an opinion rather in favour of the cradle. It is, at least, among the *little* things in which we may harmlessly err, and in which

every mother may therefore be safely guided by her own opinion, or even by her feelings. And if the child, in consequence of being sometimes rocked to sleep in the day-time, shall expect it when it awakes in the night, it will not be very difficult to find a substitute for it; and, indeed, parents seem, as it were, instinctively and mechanically, to pat and gently move a child, whether lying on the lap or the arm, whenever it appears to awake prematurely. The objections to the cradle made by some late writers, militate only against the abuse of it, from any violent rocking; as though infants must necessarily be jumbled in a cradle like travellers in a mail coach. For I cannot easily persuade myself, that we are in every thing become so much wiser than our forefathers, with whom, for some ages, and in distant countries, amongst rich and poor, the cradle has been judged to be a necessary part of family furniture.

Since the last edition of this work, some new, and stern objections have been offered to the arguments I had advanced, and from very respectable authority; but I conceive, not the result of actual experience of any ill consequences attached to the practice I had ventured to espouse. It is objected, however, that infants, after birth, pass into a very different state from that they had been accustomed to *in utero*. True; but I have not advised children to be rocked all the time they sleep, like the unborn infant; but have merely said, that as some newborn infants certainly do not sleep so much, nor so long at a time as they ought, and are often with difficulty got into that state, through illness and other causes, I conceive they cannot be *injured* by gentle rocking, when they are first laid down in the cradle, nor from being gently, and to themselves pleasantly moved, when they may be disposed to awake prematurely. More than this I never intended; whilst my argument, from the infant having been accustomed to this waving motion *in utero*, was calculated only to combat the frivolous objection, as I conceived it to be, against this very ancient practice, and not, as being a reason in itself for its continuance. But the writer observes, that "no prudent person would recommend any unnecessary expedient, which may, through inattention, be improperly used." As this argument stands, it must carry con-

viction with it; but if by *unnecessary* be meant *useless* expedient, I beg leave to deny the supposition: and in return, to inquire, what actual evils have resulted from the practice? For if these be neither frequent nor great, I would ask again, what good thing is there that has not been abused? or what is there of more importance to children than sleep? every innoxious inducement to which, it should seem, ought to be encouraged: and if so, the cradle, or some similar means of grateful motion, does not appear to be wholly unnecessary.

Throughout the period of childhood more sleep is required than in adult age; and up to the third or fourth year the child will be disposed, and ought to be allowed, to sleep for an hour or two during the daytime.

It is of considerable importance not to allow a child to sleep with persons in bad health, or who are far advanced in life; and it is always desirable that it should sleep alone.

An infant or child's bed should be firm and elastic, and of such material as can readily be dried, or altogether changed, when wet. To answer these ends, a small tick, filled with straw, forms the best bed for an infant, or young child; the straw should be often changed, and the tick as frequently washed and well exposed to the air. For a more advanced child, a hair mattress answers very well. It should be exposed daily to a current of air, and placed out of doors for an hour or two in the sunshine when the weather is fine.

MOTION AND REST.

It is chiefly the former of these that will claim our attention, as infants ought scarcely to be ever in a perfectly quiescent posture, except when asleep, and, happy for them, that active principle with which nature hath endowed them, is so vigorous and overflowing, that they reluctantly submit to it. Exercise, like air, is, indeed, of such universal importance, that neither children nor adults can possibly be truly healthy without it; whilst for the former, particularly, care should be taken that it be properly suited to their age.

The first kind of exercise consists in dandling, as it is called,

patting the back after feeding, and gently raising the child up and down in the arms; taking care at first not to toss it very high, infants being very early susceptible of fear, and even capable of being thrown into fits by it. Another exercise adapted to this tender age, and of the utmost advantage, is rubbing them with the hand. This should be done all over, at least twice a day, when they are dressed and undressed, and especially along the whole course of the spine: and ought to be continued for some time, being peculiarly agreeable to the child, as it constantly testifies by stretching out its little limbs, and pushing them against the hand, with a smile expressive of the satisfaction it receives from it. Such gentle exercise may be partially repeated every time the child's clothes are changed, by rubbing the lower limbs, and every other part within reach.

During the first few weeks the infant should be carried in a reclining position on the arm of the nurse, and in such a way as to afford entire support to the body and head; at this early age it should never be carried in a sitting posture. As they grow older, their exercise should be proportionately increased, and, as has been observed, they ought never to be carried in a quiescent posture, but the arm that supports them should be continually in such motion as the nurse may be able to continue; for children delight to be in constant motion, and this exuberant activity is given them for the wisest purposes, and ought by no means to be counteracted. And I notice the mode of carrying them, because I have seen children slung carelessly over the arm in such a manner, as neither affords them any exercise, nor allows them to give any motion to themselves; which lively children will always endeavour to do.

When the child is carried out in the nurse's arms due care should be used not to compress either its body or limbs in any degree, but to allow of perfect freedom to both. It is important also to change from time to time the arm on which the child is carried. And, indeed, the manner of carrying an infant is of more importance than is generally imagined; for, from it, the child will contract a habit, good or bad, that it will not readily give up, and may be as much disposed to become rickety by

improper management in the arms, as if it were lying wet in the cradle.

It may be a proper inquiry in this place, at what age children should be put on their feet, a point on which people differ considerably; but I apprehend nothing more is required than to follow nature, whose progress is always gradual, as our imitations of her should be, and we shall then seldom run very wide of her intentions. If we take notice of a healthy child, we observe it to be always in motion, and as soon as it gets strength it will be supporting itself by the help of its hands and feet, and be crawling about wherever it is permitted. From this exercise it will soon acquire an increase of strength; and whenever it is upheld by the arms, and disentangled from the weight of its clothes at the time of dressing and undressing, it will naturally walk up the waist of its mother, or nurse:* and by the manner of moving its limbs, and its bearing more or less on the arms, will show what advances it has made. Whenever it is strong enough, it will endeavour to raise itself upon its feet by the aid of a chair, and though it should fail again and again, it will still persevere until its object is accomplished. By this, it learns first to raise itself from the floor, and secondly to stand, though not without keeping hold of the object which it has seized. Next, it will balance itself without holding, and will proudly and laughingly show that it can stand alone. Fearful, however, as yet of moving without support, it will cling to any-

* I cannot avoid taking notice here of an imprudence on this occasion, which it is well if it have not been prejudicial oftener than has been suspected; I mean, that of suffering a child to crawl so high up the neck, as to render the mother or nurse incapable of raising the arms high enough to support it; for not only may a child be suffered to slip out of the hands, but the mother may be injured. I have felt much on this occasion, from seeing tender and delicate ladies with their arms on the stretch, suffering a heavy child, perhaps with its shoes on, to crawl over the breasts, distended with milk, and squeezing them so forcibly against the edge of the stays, that parents have sometimes cried out from the pain, and yet not been able, at the moment, to bring the infant down into the lap. But the degree of evil attached to this depends not a little on the fashion which the dress may assume at the time. This note was calculated for an abridged edition of this work, for domestic use; but as every medical gentleman may not have noticed this injurious custom, by not being often present when ladies are suckling their children, it is thought the caution may not be wholly improper here.

thing near it, and advance with caution, as far as the limits of its support will allow. This little adventure will be repeated day after day, with increased exultation, when, after numerous trials, it will at length feel sufficient confidence in its own powers to balance itself, and run alone, which it will never attempt to do until it is fully equal to the task. Now, time is required for this gradual self teaching, during which the limbs become strengthened, and when at last called upon to support the weight of the body, are quite capable of doing so. It will then be perfectly safe to permit it to follow its inclination, at least as far as the straightness of its limbs is concerned; and I think I may defy any one to produce a single instance of a child getting crooked legs, from being suffered to walk as soon as it is disposed to make the attempt. But in no wise ought Nature to be forced; for "whatever forms may, by artifice, be intruded upon her, and she compelled to assume, to enlarge, or contract her bias and inclination, she can never be made, eventually, to deviate, without manifest injury to herself, from the station and bounds unalterably impressed upon her by the unerring Power which first created and gave her laws." But the mischief is, we lead on children prematurely to the trial, by back-strings, and go-carts, and other contrivances, calculated only to spare idle nursery-maids some trouble; or, what is really pitiable, to allow poor people time to attend to other concerns, who are obliged to work for their bread. But where this is not the case, such contrivances are unpardonable, and ought to be banished from the nursery, as being productive of great evils, such as flatness of the chest, deformity of the legs, &c. As I have said before, if asked, at what age a child may be put on its feet, I should say, leave children to themselves, and they will afford a satisfactory answer in good time. I have seen two children walking alone before they were nine months old, and at ten months carrying a heavy plaything in their hands; whilst other children, rendered weak and rickety by mismanagement, have been unable to do half as much at two years of age. I have seen a child walking fairly alone, for a few steps, the day before it was eight months old.

Dr. Hugh Smith, in his "*Letters to Married Women*," says,

that children's legs do not become crooked by putting them too early on their feet; and he asks if any other animal has crooked legs, though they stand on them almost as soon as they are born. But this is running to the contrary extreme; the cases, I apprehend, being widely different: quadrupeds and fowls are designed by nature to be early on their legs, and it is necessary that they should be so. They are accordingly calculated for it, their bones being strongly ossified from their birth; but this is by no means the case with the human species, and therefore no argument can be founded upon it without considerable latitude, and making such allowances for the different circumstances of children as have been pointed out.* But if it be meant only to suffer children to *feel their way*, if I may so speak, for themselves, they will never deceive us, nor do I think their limbs ever become crooked by their spontaneous endeavours to support themselves. It is by urging them to stand and walk by means of our own awkward contrivances that the mischief is produced.

A note of Dr. Buchan, on the subject of giving exercise to children, which some people, from their straitened circumstances, cannot spare time to afford them, charmed me exceedingly. The good sense and philanthropy manifested in it, as well as a desire of extending its useful contents, will, I hope, be apology sufficient for transcribing it, especially as it is at present so apposite to my purpose; and though I cannot flatter myself that government, however benevolently disposed, will, or perhaps can, at this time, adopt such a plan, either from his recommendation or mine, it is, nevertheless, in the power of people of large fortune, both in town and country, to give it very considerable effect, especially if the premium were made double for such children as should be produced in good health. The Doctor's words are:—

“ If it were made the interest of the poor to keep their children alive, we should lose very few of them. A small premium

* The very great difference between human beings and quadrupeds in this respect should always be borne in mind, namely, that the whole weight of the body of the infant, in an erect posture, rests upon its two legs; whereas in the animal, only one half of its weight is thus supported.—S. M.

given every year to each poor family, for every child they have alive at the year's end, would save more infants' lives than if the whole revenue of the crown were expended on hospitals for that purpose. This would make the poor esteem fertility a blessing; whereas many of them think it the greatest curse that can befall them;" and I may add, I have known them express great thankfulness when any of their children have died.

The advice contained in this chapter is further worthy of serious attention, from late discoveries of much greater fatality amongst the children of the poor of this metropolis than I ever suspected.

To ascertain the fact, an inquiry was set on foot, at the British Lying-in Hospital, at the suggestion of Dr. Combe. Inquiries have likewise been making since, in different ways; and I have no reason to suspect that the statement made out from the report of the women offering themselves at the hospital, is at all beyond the fatality in other poor families in London, but, indeed, rather under it, in regard to still poorer people.

The following is a brief statement of the result of the investigation at the hospital, during the first year:—

Several women who had borne

3 children, had lost as many as 2	
4 . . .	3
5 . . .	4
6 . . .	5
7 . . .	6
8 . . .	7
9 . . .	8
10 . . .	9
11 . . .	8 and 10
12 . . .	10 and 11
14 . . .	11

And several of the mothers of the different numbers had lost them all.

During another long period, only one woman, having borne as many as five children, had reared them all; and one, having had twelve, had *eight* living. But some having had four, had

lost *three*; and five, had lost *four*; and six, *five*; and seven, *six*; and eight, *six* and *seven*; and ten, *seven* and *nine*; and women having borne eleven and twelve, had lost *eight, nine, and ten*; and fourteen, *eight*; while many who had borne four, five, and six, one twelve, and another twenty-one, had buried them all. In addition to this, may be remarked the sad and rickety state of many of the surviving children.*

The above, indeed, contains the most formidable view of this matter, but the most favourable is, by no means, such as to counterbalance it; there being, during a year and a half, three women, I think, who having borne only three children; and one woman, lately come from the country, having four children, who had lost none of them. Only one, having had as many as six, had them all living; and another had preserved eight children out of ten. Among the surviving ones, however, it was frequently observed, was the last born; therefore, one less likely to be reared than an older child.

From these different degrees of fatality, further contrasted with the small number of deaths in the hospital, within the month, we may suspect the different care and attention bestowed upon young children, as well as the want of certain accommodations; and may fairly argue on their effects, there being no such fatality amongst the opulent. A singular corroboration of this remark, I have an opportunity of noticing; a lady, who had borne fifteen children, and no more, had them all sitting around her table at dinner; and in two other families there were twenty-one children at table; and a lady once told me, that the number of her children and grand-children amounted to forty-seven.

It would be unpardonable not to add a few words in this place with a peculiar reference to *females*; upon whom, besides every infirmity common to the other sex, is imposed the painful task of child-bearing. It is the benefit of the lower class of people, indeed, that I have here principally in view; though

* During the time that I was the obstetric physician to the Westminster General Dispensary, I instituted a similar inquiry, and the result was similar: there was scarcely an instance of any woman who had preserved all her children, if she had borne more than three.—S. M.

the caution is not utterly unnecessary elsewhere. The many distressing, and sometimes fatal labours I have been witness to, have led me to regard with a kind of horror a rickety, distorted female infant, whose parent's or nurse's neglect, or ignorance, is heaping up for it additional sufferings and dangers, to those which are great enough under every advantage that art and good health can contribute.

From the age of two years, therefore, or rather earlier, this care is especially called for, and besides every caution already pointed out, lays a strict prohibition on girls being suffered to sit, for hours together, on a low seat; whereby the pelvis is pressed between the lower extremities and the spine, and is made to grow out of its natural form; or, what is worse, perhaps, than a low seat, is a perforated chair, by which the lower aperture of the pelvis also becomes contracted. The consequences of this change of figure, if it be anywise considerable, cannot fail to be productive of increased pain and dangers in parturition, frequently equally fatal both to the parent and her offspring.

I am aware that many poor people are not in circumstances to give their children all the exercise they require; they may, however, suffer them to procure as much as possible to themselves, by allowing them to crawl about on the floor, near an open window or door, instead of compelling them to lie on their backs, or to sit upright, pinned in a chair; the ill consequences of which are so exceedingly evident.

It is hoped no apology may be thought necessary for these obvious remarks: since no pains should be thought too great if they may prevent the evils here pointed out, nor can too much be said to inculcate good nursing, (and especially exercise,) which is alone adequate thereto.*

A very few words may suffice on the head of *Rest*; the irregularities therein being far less numerous and important than the former. In a general way, it will be sufficient to notice

* A proper attention to this, and many of the preceding articles, has been conceived to be of so much importance, that the benevolent governors of the British Lying-in Hospital, some years ago, gave orders that suitable directions on these heads should be drawn up, and given to every mother, on her leaving that charity.

them in regard to the improper inducement of young children to continue in action after they feel themselves wearied, and in keeping them out of bed beyond a proper hour. Children in health never wish to sit still when they do not actually feel it to be necessary, much less to go to bed over early. But it is to be remembered, that young people require more sleep, and to be longer in a recumbent posture than adults; for though they usually rise very early, they get to rest more than proportionally soon, being disposed to fall asleep almost the moment they are still; and this is natural to them, and is a demonstration of the advantage of exercise.

Notwithstanding what has been stated of the beneficial effects of exercise, we cannot close this subject without strongly censuring the practice of children being taken for long walks; and in the following extracts from letters, recommended by Dr. Marshall Hall, an example of the pernicious effects of such walks is most faithfully and forcibly stated:—

“ Besides the wholesome influence of exposure to a free open air, the benefit accruing from exercise is very great at all ages. The infant should be carried out at stated periods daily; the child should be led to take gentle walks.

“ Regularity in these points is of the utmost importance. Neither should the system of gentle exercise be intermitted from slight causes,—from slight inclemencies of the weather. An infant or a child will never take cold, if properly clothed and defended from the air,—if it be taken out and brought promptly in, although the weather be intemperate. It is loitering, and lingering, and so exposing the infant unduly and for an undue length of time, which are usually the real sources of the evil, when this does accrue from taking it into the open air. Let the minutes of their exercise be counted; but still let the exercise itself not be intermitted, except when the weather is extremely inclement indeed.

“ This observation leads me to a most important remark. It is, that in the midst of a system of what is deemed exercise, this is sometimes allowed to pass into fatigue. The infant is kept too long exposed to the air, to its kind of fatigue; the child is allowed to be too long upon its feet; exhaustion is induced,

growth and nutrition are arrested, and perhaps a febrile attack, or even a state of protracted debility, may be the consequence.

“ Sometimes the fretfulness and indisposition of after life, sometimes pining and consumption, are to be dated from this cause. As I think the circumstance not sufficiently attended to, even by medical gentlemen themselves, I shall insert an interesting case of this kind from the pen of a most intelligent friend :—

“ A little girl was left to the care and discretion of a nursery maid. They left home and gossiped from cottage to cottage for four hours. The child, naturally active, lively, and happy, amused herself with skipping about, and plucking flowers, but at length said, ‘ I am so tired,’ and wished to go home. This home was at a considerable distance. On entering the house, she took off her bonnet and lay down, refused her tea, and requested to be taken to bed. Before she was undressed, she fell asleep, and did not wake for three hours ; she then appeared uncomfortable, refused food, but asked for drink : she became feverish. This febrile state continued for a long time, and even after it had ceased, she never regained her colour or strength, but remained pale and feeble.”

ON SOME SLIGHT NATURAL DEFORMITIES.

Prolix as these articles may already have appeared, it may, nevertheless, add a completeness acceptable to the younger part of the profession, to comprehend under them other particulars of no small importance, that relate equally to both. These will respect the different *modes* of motion and rest, in order to point out the several improprieties that have a natural tendency to induce, or increase, various corresponding deformities.

Such will relate to the manner of children’s *standing, walking, sitting, and lying* ; and will particularly respect the position of the head and feet, and the form of the back, shoulders, and hips. It may not, therefore, be improper in this place, nor, it is hoped, be thought going out of the true line of my

profession, to advert a little to each of these. Indeed, to propose regulations of any kind, merely with a view to graceful standing or walking, would be highly incompatible with the intention of the work; but since this part of it is appropriated to the general management of children, it is hoped the reader may not deem it altogether impertinent that he is invited to pay attention to certain things, which, for want of correction whilst children are young, and frequently under the eye of medical people, may, by the neglect of their ordinary and less intelligent attendants, grow up to real evils. For it is very certain, that, from an improper manner of resting upon any of the extremities, whether in sitting or otherwise, different parts may take an ill form; and what is worse than an awkward appearance, (to which their parents are apt to confine their attention,) children often grow up weak; whereby the poor become unfit for those labours and exercises for which they are designed, and which the necessities of their situation frequently demand.

And I here beg leave to remark, that the very means frequently made use of by people of rank, to prevent some of these deformities, may, on the contrary, occasion them. Such are the use of steel collars, various sorts of stiff stays, and other tight bandages. For I am confident, nor am I singular in the opinion, that when recourse is had to these things, before any parts have taken a wrong turn, they are very likely to occasion it. Not that such contrivances are afterwards improper; for when the bones have, by any means, been thrown out of their natural direction, art can frequently rectify it, and point out where to apply, or to take off, pressure. But before this, and while the bones are growing, compression must be injurious, owing to the continual and irregular action of children, especially when they feel any parts unpleasantly confined.*

* The very interesting subject of curvature of bones, deformities, debilities, &c. has attracted the attention of several very eminent practical anatomists and surgeons of great mechanical skill and ingenuity, and much light has in consequence been thrown upon the pathology of these complaints; and appropriate means of relief have been devised. The writings of the late Mr. Wilson, of Dr. Harrison,

I come now to the circumstances immediately hinted at, and first those which regard the head or neck.

Many infants come into the world, either with the neck drawn a little to one side, or an awkward turn of the head appears to take place afterwards. In the latter instance it may be the effect of habit, and, amongst other causes, may be owing to children being placed in the cradle, or carried improperly, so that the light, and other objects that forcibly attract their notice, are too frequently on the same side. The remedy in either case, as far as it may become such, is obvious, differing nothing from the intentions noticed in the chapter on squinting: every thing should be so contrived as may tend to draw the head to the other side, and especially such things as may have a sudden and forcible operation on the muscles, by producing strong voluntary motions. It may not, perhaps, occur to every one, how much may be effected by such means: several striking instances of it, however, have been met with;* and we daily observe similar effects of a certain position in flowers and shrubs, which, without any help from the hand, turn about, obedient to the air and sun, operating upon their internal structure.

The next observations respect the back and shoulders. Some young children, naturally well-formed, acquire after a while what is termed round-shoulders; the vertebræ of the

Dr. Jarrold, Mr. Ward, and Mr. Copeland, &c., on the diseases of the spine, ought to be consulted by all who undertake the treatment of these calamitous complaints. The practical and scientific works of Mr. Shaw are particularly deserving of attention.—S. M.

* An Ambassador from Morocco, being at Paris, went to see the Charity Hospital, where, passing the ward for the wounded, six of them, who had not stirred for several months before, rose up, and came to the ambassador, to the great surprise of the whole hospital:† curiosity or surprise effecting that which the most powerful medicines could not, in so short a time.—The like circumstance is reported to have taken place, from a fire happening in the house where an elderly lady had long lain bed-ridden, who, perceiving the fire, suddenly rose up from her bed, without any assistance, and ran into the street.

† Histoire de l'Ambassadeur de Maroc, Envoyé au Roi de France, en 1682.

neck and back projecting too much, and forming an unsightly curve.

The morbid affection of this part will be considered in its proper place ; I have only to notice here a change arising merely from some bad habit or custom, through an improper manner of *sitting* or *standing*. In regard to the former, it may be observed, that the soft concave-bottomed chairs, in which young children usually sit, are on many accounts improper for their years, and that they should always make use of a flat and hard seat, and generally without arms, as directed for the *prolapsus ani* ; which complaint it would have a tendency to prevent. But in the hollow-bottomed chairs children find themselves obliged to recline in one way or other, or to be making certain exertions for keeping themselves upright, and preserving an equilibrium of the body ; and it is obvious, that either a bending posture, or the efforts necessary to avoid it, often repeated, may become hurtful to weakly children.

An improper manner of *standing*, though less frequently a source of this kind of mischief, on account of the position being more frequently varied than in sitting, is, nevertheless, capable of giving an awkward turn to the back and shoulders, as well as to the feet. We are creatures of habit, both in respect to our bodies and minds, so that to whatever we may have, for a little while, accustomed ourselves, we have an increasing propensity ; and when the habit is once formed, it is with difficulty broken. Children should, therefore, be early accustomed to stand very upright, instead of being suffered to lean upon whatever may happen to be near them, as they are frequently disposed to do.

Should one of the shoulder-blades *project* more than the other, the child should lie, as much as may be, on the contrary side ; as the shoulder upon which one lies always projects beyond the plane of the back. When the shoulders themselves happen to be too high, a child so disposed should never be suffered to sit in an elbow chair ; nor should any child sit before a table that is either much too high or too low for the seat in which he may be placed, especially if it be for the purpose of reading, writing, or any other employment that may engage

him for any length of time. But if one of the shoulders is *higher* than the other, the child should frequently be directed to stand only upon the foot of that side, at least to bear his weight chiefly upon it; by which means the shoulder that is too high must necessarily fall lower, and the other be raised; or a small weight may be put upon the shoulder that is too low, which will incline the child to raise it up. Or he may be caused frequently to carry a light chair, or such like, or plaything, in the hand of that side, which will have the same effect. The like means should be used when one hip is higher than the other, which is both a very common and peculiarly unfortunate complaint, especially to females.

Another easy and efficacious means of rectifying the shoulders, is to make the child support himself with a very short cane on the side where the shoulder is too high, which will oblige him to lower it; and, at other times, to put one that is too long for him into the other hand, which will raise the shoulder on that side. He may likewise often sit in a chair with two arms, one of them being made a little higher than the other.

These, and other similar means, may be very easily complied with; and several of them so managed as to be made a sort of play or amusement to the child; and, if properly persevered in, will correct many deformities that have originated merely from bad habits, as well as conspire with other contrivances to remedy such as may depend upon a slight malformation.

The *feet* of children are likewise liable to receive an improper turn; and this may arise from habit, as well as from original malformation. Children, when conversing with those with whom they are familiar, seldom stand firmly on their feet, but are apt to lean upon one side of them, so as to bear almost upon the ankle, instead of the soles of the feet. By degrees, this habit is not only increased, but the tendons themselves are disposed to contract, or those on the opposite side become weakened. In the like manner, by standing upon the toes, the tendon of the heel, in time, becomes shorter, as was formerly very manifest in women who wore very high-heeled shoes. To

obviate the former, little more is required than to correct the child's manner of standing, by teaching him to bear firmly on the bottom of his feet; or if a foot be turned very much to either side, the sole of the shoe may be thickened upon the side on which the child bears. If, by treading upon the toes, the heel is become contracted, the heel-piece should be taken off from that shoe, instead of its being raised, as hath sometimes been very improperly done. Besides this, such children should be frequently caused to walk up steep ascents, by which they will be obliged to raise up the fore part of the foot, whereby the tendon of the leg will be stretched, and the heel must fall lower.

Most of the remedies proposed for these little disorders, will have another advantage, as they necessarily inculcate exercise, in favour of which so much has been said; the great neglect of it, especially among the younger children of the poor, is daily lamented by every man of observation and feeling, and the more so, as it is a good they cannot always command.

If I had not already far exceeded the bounds I had intended, I should be induced to say something on the manner in which exercise becomes so beneficial to children. Let it suffice, however, to extract a few of the pertinent and elegant remarks of Desessartz* on this head, whilst I more briefly observe, that

* "La liaison et la dépendance que l'auteur suprême de la nature a établies entre toutes les parties de ce composé merveilleux, sont si intimes, que le Prince de la Médecine nous a représenté le corps animé et jouissant de ses fonctions, comme un cercle dans lequel on ne peut reconnoître ni commencement ni fin. En effet, les instrumens destinés à la chylification tirent toute leur force des organes de la sanguification, ceux-ci des nerfs et du fluide qu'ils contiennent; et ce fluide (si nous en croyons le système le plus universellement adopté, et auquel il manque peu de chose pour être démontré) ce fluide tire son origine du sang, et le sang des alimens que nous prenons tous les jours. De la constance et de la régularité de fonctions aussi différentes et multipliées, dépendent notre santé et notre vie. Il ne suffit pas de prendre des nourritures, il faut qu'elles soient bien digérées, changées en sang, et ce sang doit être assez travaillé pour fournir non seulement la lymphe nourricière de tout le corps, mais encore un fluide très-subtil qu'on appelle fluide animal. Chaque liqueur doit être séparée dans ses glandes, et celles que la nature rejette comme inutiles et dangereuses, doivent être poussées au dehors.

"Or, rien n'est plus propre à faciliter et à perfectionner toutes ces opérations que l'Exercice. Si nous jettons les yeux sur notre corps, nous y appercevrons une multi-

exercise tends to push forward the blood through the small vessels, and to unfold them in the manner nature has designed them to be extended, in order to promote the growth of the infant, whilst it preserves the blood in a proper state of fluidity, and promotes both the secretions and excretions; which are the next things it was proposed to consider.

RETENTION AND EXCRETION.

Every medical reader will be sensible, how greatly health depends upon a due proportion between the daily supplies and the various discharges of the body; the latter will vary according to the diet, age, and particular mode of life of each individual. The excretions of infants, however, insensible perspiration excepted, are chiefly from the bowels and bladder. The latter is not very liable to disorders: as these sometimes take place, however, the subject ought not to be entirely passed over.

RETENTION AND SUPPRESSION OF URINE IN NEW-BORN INFANTS.

Suppression of urine during early infancy is characterised by a want of fulness at the lower part of the abdomen. It is usually removed by applying a bladder of hot water to the belly, and gently rubbing with a little warm brandy, with oil of juniper, and oil of almonds, or an onion, and throwing up a clyster; or, should these fail, the infant may be put up to the breast in a warm bath, and take a spoonful of

tude de vaisseaux qui sont entrelacés les uns dans les autres, serpentans entre les fibres musculaires, à la pression successive desquelles ils doivent une grande partie de leur mouvement et de leur action sur les fluides. A mesure que les muscles entrent en jeu, ils produisent des secousses réitérées sur les vaisseaux sanguins, qui se communiquent dans tout le système artériel et veineux. Ces secousses non seulement procurent aux fibres la force, et la souplesse, qui caractérisent leur bonne constitution, mais elles broient, atténuent et subtilisent les liquides contenus dans les vaisseaux, achèvent la transmutation du chyle en sang, en lymphe, et en fluide animal; la circulation est plus libre, les secrétions se font mieux, et plus uniformément, et la digestion en devient plus parfaite."—*Traité de l'Education corporelle des Enfans en bas Age.*

marsh-mallow, or parsley, or wild carrot tea, sweetened with honey, with the addition of two or three drops of the *spirit. æther. nitric.* This, if there be no mal-formation of parts, will generally produce the desired effect in the course of a few hours: though cases have occurred in which infants have voided no urine for the space of four days, and have suffered very little inconvenience: I have even known one instance of the suppression continuing for five; and it is remarkable, that two former infants in this family voided no urine for three days. Should the suppression, however, continue for two complete days, the following cataplasm may be applied warm to the region of the pubes.

Take of parsley and mallow-roots, leaves of cresses, and juniper-berries, each a handful, and of the roots of garlic one ounce; boil them slowly in water, or in wine, to the proper consistence for a poultice. On the other hand, the sudden application of cold to the *regio pubis*, has sometimes produced an immediate good effect. Where all these means have failed, and the infant been in much pain, I have directed a clyster with a few drops of laudanum, which has presently removed both the pain and suppression.

The urethra of new-born infants is sometimes obstructed by inspissated mucus; it may be proper, therefore, when many hours elapse without any water being voided, to pass a small probe, or bougie, in order to ascertain whether there be an actual impediment to the passage. In general, the non-voidance of water arises, not from want of expulsatory power in the bladder, but from want of secretion in the kidneys. In this case, clysters, fomentations over the loins, the warm bath, and emollient diuretics, are the appropriate remedies.—S.M.

As in adults a retention of a very distressing kind sometimes occurs, merely from a spasmodic stricture of the urethra, and not only resists, for a length of time, the ordinary means of cure, but is found to recur again after a temporary removal, it may not be amiss just to notice it here, as the complaint may, possibly, be met with in robust youths, although I have never yet seen it. The remedy for it is also very

simple, and, I believe, newly-discovered, and first announced by Mr. Cline,* consisting only in the *tinctura ferri muriatis*, which he advises in the dose of gtt. x. to adult persons, every ten minutes, till some relaxation shall take place; which generally happens in the course of an hour.

Some of the old writers have spoken also of incontinence of urine, arising from weakness of the sphincter of the bladder; but I have never met with it in early infancy. They prescribe agrimony and myrrh, and direct astringent fomentations of red wine to the belly, perinæum, and loins: for adults, (it being no uncommon complaint in old people,) three grains of camphire in a pill, and fifteen or twenty drops of laudanum in a dose of camphire julep, twice a day, have speedily removed the complaint.

THE REGULATION OF THE BOWELS.

So many particulars relative to these points are discussed in the following pages, as render it needless to say more now, than that (generally speaking) infants are rarely healthy long together, who have not two or three stools every day; or should they be more, for the first three months, if the child be brought up at the breast, and the nurse have a sufficiency of milk, it will generally thrive the better. The stools likewise ought to be loose, of a yellow colour, free from lumps, or curdy matter, neither of a very acid nor fetid smell, and should come away without griping. When children are about a year old, or perhaps earlier, pains should be taken to procure one stool at least every day, as well periodically as constantly; and for this the morning is most adapted, and after their breakfast, by which the stomach and bowels will be stimulated. To this end they should be set on the chair, and not suffered to play till they have had an evacuation, for which they should strain, till at length it becomes customary, which may be easily effected; by which we shall gain a point with respect to the health of children. On the other hand, if an infant be dry-nursed, the

* Medical Records and Researches.

danger generally lies in the other extreme, such children being disposed to be purged, and to have griping and sour stools, from the acescent, and oftentimes indigestible nature of their food, especially if fed by the spoon; and therefore require an early attention when their bowels are disposed to be open, or, on the other hand, the feces are too stiff and clayey; and their food ought to be changed, in the manner directed under the article of Purging.

Some infants are constitutionally costive, and do not pass a stool above once in thirty-six hours, and yet are healthy and thriving. Where such is found to be really the habit of the infant, it is unnecessary to be over solicitous to alter it by purgatives. If the infant is at the breast, the nurse may vary her diet, and render it somewhat more aperient: if the infant is feeding, let it have a more laxative diet; should dentition be going on actively, mild aperients will be necessary.

THE PASSIONS OF THE MIND.

This is the last article mentioned as included in the *non-naturals*, and on which I shall be very brief, it being the happiness of infants to be very little affected by them. This article can, therefore, relate to them merely in regard to their mode of expressing such passions, and principally respects laughter and crying. The former, if long kept up, or very violent, may not only induce the hiccough, but may even throw an infant into fits. The latter is much oftener suspected of being mischievous; and chiefly by occasioning fits, or a rupture; the excess of both these affections should, therefore, be guarded against. Moderate, and not too frequent crying, however, ought not to be alarming; and, indeed, a variety of considerations induce me to think, that this expression of the passions in infants is not only much more harmless in itself than is generally imagined, but is also in some respects salutary. The first cries it makes we know to be so, and that children recover from the paroxysms of some complaints by an effort of this kind. It is evident, likewise, how very much health depends on a free circulation of the blood through the lungs, and on

their free expansion from the dilatation of the bronchial vessels. But as new-born infants are incapable of giving themselves any exercise, and, indeed, of receiving that kind which tends to promote such an effect, I have conceived crying to be an effort which nature may have wisely substituted in its stead.* Whatever is truly natural I always conceive to be right, though every thing is capable of being abused; and the most beneficial dictates of nature may be exceeded. I am satisfied, however, that the pacifying of children by improper means, and especially cramming them with food when they are not hungry, occasions far greater evils in thousands of instances, than ever were produced by the irritation from crying.

The cries of infants, however, it must be confessed, are, very commonly, plaintive; and, as they seem to argue distress, cannot but create it in every person of sensibility around them, and merit a strict inquiry into the particular occasion of them. The nurse, therefore, who can with calmness hear an infant cry, without attempting to pacify it by every proper means, is a monster in human shape, unfit to be trusted with the care of rational beings; much less with a tender, helpless creature, whose only language, by which it can express its wants or its sufferings, is its TEARS.

So constantly, however, is a beneficial purpose conjoined with apparent suffering, that instances are not rare of delicate infants being benefited by the bodily activity and deeper respirations involved in occasional crying. When active disease is not the cause, such children turn out more robust than others. The intelligent mother or nurse will readily distinguish the different kinds of crying: the constant and plaintive wail characterizes disease, and betokens both suffering and danger.

I cannot take my leave of the reader, without offering one apology more for having dwelt so long on this, and some other heads less important than the rest; my motive has been the desire of instructing, though in some instances at the risk of tiring, or otherwise displeasing; but practitioners, who feel as parents, will endeavour by every means to lessen a mother's

* *Fletus moderatus pueris non obest—pectus dilatat et calefacit.—Primeros.* See also *Aristot. Politic. lib. vii. c. 17*, where the idea is supported more at large.

fears, as far as they may appear to be needless, wherever no other remedy can be offered.

I shall conclude by observing, that though the passions of the mind refer so little to infants, they relate very materially to the wet-nurse; who, besides endeavouring to keep her spirits as calm as possible, ought to be exceedingly careful not to put a child to her breast, when under the influence of undue passion, of whatever kind it may be, the bad effects of which are instanced under the head of diseases. And I shall think myself well recompensed for the trouble I have had, if the counsel I have been able to offer may prove the means of lessening the dangers of the infant state, and the consequent sad fatality that attends it; as well as of abating the anxiety of the fond mother, who, after having brought her tender charge into the world with sorrow, is pierced with double pangs at its leaving it; an event which, as experience warrants me to say, may by art and good management, be often prevented, and the author ardently hopes, that both parents and practitioners may have fewer occasions to lament.

SECTION III.

ON THE EARLY DETECTION OF DISEASES.

THE subjects of which we have hitherto treated relate principally to points which require the mother's tender care. Those which come to be next discussed, also first require the nurse's, but especially a mother's, eye, although it eventually devolves upon the physician to take the charge of every serious malady in infants and children.

There are many changes, in infants* and little children, which the mother alone has an eye and an ear to observe. A nurse never can be supposed to feel the same keen interest in the little infant, or to possess the same quick perception, which shall lead her so to watch it, as to detect those nicer degrees of change, which frequently afford the first, and consequently the most important, indications of indisposition in early infancy.

The physician is too little familiar with the natural appearance and manner of the individual infant, and his opportunities of observing it are too short, too little sustained, fully to enable him to seize the incipient and fainter shades of symptoms which are the precursors or harbingers of infantile diseases.

But the anxious and watchful parent, who duly mingles intelligence with her anxiety, and observation with her watchfulness, will promptly observe many changes in the countenance, or in the mode of breathing, for instance, which entirely escape other eyes; and will perceive many changes of tone and manner in the voice, and in the mode of crying, which escape other ears.

In this manner it frequently happens that the parent first observes, and then describes to the physician, appearances and changes which might otherwise long—perhaps too long—have escaped attention. The parent detects the *symptom*, which the physician sees to be the *sign* of the internal disease.

I am disposed to estimate at a high value, the co-operation of the watchful and intelligent parent, in the observation and treatment of the diseases of infants and children. The parent should not be her infant's physician, but she should be its watchful nurse. She should not pretend to understand its diseases, which would imply a knowledge of anatomy, physiology, and pathology, which she cannot be supposed to possess; but she should be as one who carefully prepares a brief for his counsel, collecting the evidence, but leaving the inferences and the decision to him.

To the physician there is not, in the whole circle of his professional studies, a subject of purer or more interesting ob-

servation than the diseases of infancy. He should lean over his little patient, and watch the countenance, the attitude, respiration, &c. as the artist studies a statue of ancient Greece, in order that he may seize and observe all its minuter, finer varieties of surface and contour. Nothing is so calculated to exercise and increase the power and delicacy of observation in the physician, as the careful and sustained study of infantile diseases. By it he learns to read in the face and manner of the little infant its pains and its sufferings, and the signs of its various diseases. He thus becomes apt, not only in the detection of infantile diseases, but in the minute observation of the symptoms in the cases of older patients.

But still the parent has an advantage which the physician cannot have; she knows the infant's natural expression of countenance, its manner, its habits. She, and she alone, therefore, has a point or standard of comparison: she alone can perceive, can detect, the slightest, fainter shades of change. Her ear alone is attuned to the music of the natural and healthy voice and cry of her infant; she alone can detect those faint notes of discord, which first denote that some of the chords of this "harp of a thousand strings" are unstrung. That appearance which may be perfectly natural in one infant, may be the sign of disease in another; and this the mother alone can know.

A parent may perceive changes in the infant's countenance, in the attitude, the mode of breathing, of crying, which none else could perceive. A start, a cry, too evanescent for any other observer, will indicate to her the occurrence of pain, or of other disturbed conditions of the sentient system, which will at once warn her that something is wrong, and lead her to fly to the proper means of averting an impending evil. Such events, however apparently trifling, are to be carefully remembered, and communicated to the physician. For want of this, many a life, dear to the parent, has been lost.

It is the duty and office of the mother to observe and to describe these symptoms of indisposition in her infant.

She should cultivate the eye, the ear, the habit of observation in regard to her little charge. She should be the first to

observe any change in its countenance, in any action, in any function of life. All such changes of the external appearance are significant of some internal change. Even unwonted dullness of the eye, or of the spirits, or unwonted inappetence for food, has its cause, and speaks a language at once intelligible and significant to the watchful mother. She should not observe sleepily, as it were, but be roused at once, by observation, to action: seeing the signs of disorder, rest not until you apply the means of cure. How often—how often, alas! too late do physicians hear that remark of a mother overwhelmed with anxiety and grief—"I can remember that the little child was not well, but I did not suspect such a serious state of things!" No indisposition is trifling in infants. Convulsions and hydrocephalus, the most distressing and alarming diseases to which infancy is liable, come on so suddenly, or so insidiously, and with such slight intimations, that our attention should be excited to the utmost, by every alteration of appearance or manner in infants, however faint,—however fleeting.

In order to assist in the early detection of diseases, it may be well to lay down several arrangements of such as are most frequent, or most important. This plan will enable the parent or the young physician to disentangle the maze of these diseases; to decypher their language; and to understand its import.

The most frequent diseases of infants, then, are—1. disorders of the stomach—2. disorders of the bowels—3. exhaustion—4. febrile affections—5. exanthematous diseases, or those diseases which are attended with eruptions on the skin—6. affections of the head—7. diseases of the thorax or chest—8. affections of the abdomen or belly.

Disorders of the stomach generally depend on improper diet; or they may be secondary, and the effect of a disordered or confined state of the bowels. They are often detected by acid or foetid eructations and breath, or by the unusually frequent regurgitation or vomiting of food.

Disorders of the bowels can never be mistaken or overlooked by an attentive nurse, the evacuations, in their number and appearance, being the perfect index to these disorders.

It must never be forgotten that whenever the system has been exposed to sources of exhaustion, this condition may become, in its turn, the source of various morbid affections, which are apt to be ascribed to other causes, and treated by improper, and therefore dangerous measures. If the infant has had diarrhœa, or if it has been bled by leeches; or if, without these, its cheeks are pale and cool; and if, under these circumstances, it be taken with symptoms of affection of the head, we must not fail to remember that this affection may be the result of exhaustion. Some years ago I brought this important subject before the profession; it seems previously to have been generally misunderstood.

Fever is sooner detected. In every such case the little patient should be watched with redoubled care and attention.

The skin especially should be examined hour after hour for eruptions. It may be measles, scarlatina, &c.

Above all things, let not a contracted brow, an unusual state of the temper or manner, unusual drowsiness, or wakefulness, or starting, and especially unusual vomiting, pass unobserved.

We should be alive to any acceleration, or labour, or shortness of the breathing; or cough; or sneezing; or appearance of inflammation about the eyes or nostrils. These symptoms may portend inflammation within the chest, whooping-cough, measles, &c.

Pain of the belly, with or without vomiting; or diarrhœa, with or without a morbid state of the bowels, or of the discharges, will also doubtless excite immediate attention. One caution I would give on this subject. Some of the more alarming and fatal affections of the bowels, like some affections of the head, are unattended by *acute* pain or tenderness; their accession, on the contrary, is insidious; and it will require peculiar attention to detect them early.

Another view, and another mode of classification, of the diseases of infants, full of interest, full of admonition, is—1. as they are *sudden*, or, 2. as they are *insidious*, or 3. as they are intermediate in the mode of accession between these two extremes.

Of the sudden affections are,—fits of every kind, croup, and

some kinds of pain, as that of colic. Of the second class are hydrocephalus, or water in the brain, and tubercles in the lungs or abdomen, constituting the two kinds of consumption.

Fits, again, are cerebral, and arise from disease within the head, or from irritation in the gums, stomach, or bowels, or from exhaustion; or they are cardiac, and depend on some malformation or disease of the heart.

Sometimes the attacks assume the character of croup; there is a crowing cough, and crowing breathing; or there is difficulty of breathing, and then a crowing inspiration. The former case is generally croup; the latter is in reality a fit dependent on a morbid condition of the brain or spinal marrow, although it takes the appearance of an affection of the organs of respiration.

The insidious diseases are to be detected early by a strict observation of the countenance, manner, gestures, &c. of the infant. Any thing *new*—any thing *strange*, should obtain immediate attention. It may portend some sad affection of the head.

The same remark must be made if the infant fall off in its looks, colour, flesh, &c. This may be the consequence of tubercles, the harbinger of consumption.

The infantile diseases which occupy an intermediate rank between the sudden and the insidious, are usually sufficiently marked by their appropriate symptoms, and need no particular notice here.

We now proceed to notice the principal *sources* of the diagnosis of the diseases of children.

I.—OF THE COUNTENANCE.

The infant's countenance offers to us the most interesting and the most intelligible page in Nature's book. In its *calm* we read the health and ease of all its organs,—of all its functions. In its smiles we read its happiness of body and mind. In its expressions of uneasiness or pain, we first discover the invasion of disorder or disease; our attention will probably be first attracted by some undefined *change*, which it will require a

stricter observation to decypher and associate with its peculiar cause.

But it may be well more distinctly to enter upon the consideration of pain, and of its expression in the countenance; an event so frequent in infancy.

Pain may be sudden in its first attack, and in its recurrence. This circumstance will denote that its cause is not permanent in its operation. Such pain has frequently a spasmodic origin, and its seat in the bowels. On each recurrence of spasm, the countenance is painfully contracted, the body gives a sudden start, and the infant utters a sudden cry.

Pain of a more permanent kind is frequently more gradual in its invasion. Its expression in the countenance varies with its kind and seat. Pain of the head induces a contracted brow; pain in the belly occasions an elevation of the upper lip; whilst pain of the chest is chiefly denoted by sharpness of the nostrils. A dark circle round the mouth and eyes is evidence of a languid circulation, or undue performance of respiration, and also of indigestion.

Again I urge the importance of eagerly seizing every *change* of expression in the infant's face. Its cause—its origin must be ascertained by other signs. It is of the first importance to know that some indisposition exists. Its kind and nature are to be determined afterwards.

But this remark is most important in the case of impending convulsion. Long before actual convulsion has taken place, the countenance denotes its approach,—the *countenance becomes convulsive*. The old nurses are aware of this, and frequently observe that the infant is convulsed *inwardly*. How do they know this? They read it in the countenance. "The countenance is convulsive." I never allow myself to disregard the remarks of these sages,—but especially on this point. They have observed what has been too evanescent for me to observe,—what has not existed at the time of my visit or visits. Some *change* has been remarked. It cannot be described; but it nevertheless existed. And the infant is vaguely said to be inwardly convulsed.

Still there is something in the convulsive countenance which

admits of description. The upper lip is drawn,—is bluish or livid; or there is slight squinting, or a singular rotation of the eye upon its own axis. This is often detected by the sensitive parent, or the observant physician.

Thus that affection, which of all the diseases of infancy it is most desirable to *prevent*, may be anticipated in its full accession by the most energetic modes of treatment.

The next point to be noticed in the infantile countenance is its varied degree of suffusion or pallor.

Suffusion accompanies and denotes fever, and all diseases of general excitement; a flushed and heated condition of the countenance will, therefore, always deserve, and it is so obvious, that it never fails to excite, attention.

But there is a class of morbid appearances, which have been too little attended to, until recently, by medical persons. They arise from exhaustion. This exhaustion is chiefly produced by previous diarrhœa, or the abstraction or loss of blood.

In such cases the face of the little patient is frequently alternately flushed and hot, and pallid and cool, or cold. The flush is transient; the pallor more permanent. With the pallor the countenance is of various degrees of coolness, and in the more extreme cases the skin has a glazed and waxen appearance.

It is in such cases that the countenance has been designated *the pulse of infancy*. Its degree of pallor and coolness denote, indeed, the degree of weakness and exhaustion.

In the very extreme cases with the pallid, cold, and glistening cheeks, the eye-lids are half closed only, the exposed part of the eye inflamed, the pupil contracted, the cornea covered with a thin film of mucus.

There are two other affections of the complexion which deserve a cursory notice in this place. The first is that *deep blueness* or lividity which constitutes what physicians term the *morbus cœruleus*, and denotes a malformation of the heart:—the other is *icterus* or jaundice.

There are still two other affections of the complexion which it may be well shortly to mention. The first is a state of chronic or continued pallor and waxen hue, which denotes,

frequently, long before its actual appearance, the accession of purpura, or purple spots, with various kinds of loss of blood, as from the nostrils, mouth, bowels, &c.

The other form of morbid complexion is icterode, or *like* that in jaundice. It arises from various causes; it may denote defective nourishment, or a long protracted disordered condition of the bowels; or it may arise from the sad habit of giving spirits, and especially anodynes or opiates. It is obvious that it can only arise from defective nursing.

II.—OF THE GESTURES.

Every change of manner, every unwonted gesture in an infant, speaks to the observant eye a language not to be misunderstood.

Every deviation from the natural attitude is an indication of some change in the strength, or in the internal sensations, and consequently in the health.

At a certain age the infant begins to support itself,—to support its head. During an attack of disorder there is frequently a degree of muscular weakness which renders the infant incapable of doing so. The posture, the movements, are those of languor.

At other times the infant experiences a sudden start, or a more lasting rigidity of the muscles. This may arise from pain, or it may be convulsion. In the former case the infant begins to cry violently; in the latter there is frequently an expression of stupor, terror, or surprise, and other symptoms of spasm or convulsion will be detected on a careful observation.

The most remarkable of the symptoms just alluded to are a croupy sound in the breathing; an unusual and unnatural contraction of the fingers and toes, and swelling of the hands and feet; the thumb and fingers are drawn into the palms of the hands, the toes towards the soles of the feet, whilst the back part of the hands and feet are puffed and tumid. This indication of convulsion was thought of sufficient importance by the late able Dr. Kellie, of Leith, to be made the subject of a distinct communication to a medical journal.

Watch therefore the condition of the infant's fingers and toes; especially examine them if there be any other indication of convulsion; and if they are ever observed to be otherwise than expanded, fail not to attend to the circumstance in the most prompt and serious manner.

Sometimes the head is drawn rigidly backwards, or one arm is firmly, or at least unnaturally drawn to the side, or one leg is apt to be drawn upwards. This is also a symptom of convulsive affection.

To return to the effects of pain on the gestures. A sharp spasmodic pain will induce a sudden contraction of the whole of the muscles; the legs are drawn forcibly and suddenly upwards. But the pain of inflammatory affections frequently induces the little patient to avoid every muscular effort. It is alarmed if it be so placed as to call for muscular action. This circumstance should lead to immediate inquiry as to its cause. It will be more apt to escape attention than those sudden starts which pain of a different character is so apt to induce.

In pain of the head the arms and hands are frequently raised; and in pain in the abdomen the legs are apt to be drawn upwards. Infants have in health certain habits which frequently cease during indisposition. Yawning, hiccup, a sort of cooing,—evidently the expression of ease and satisfaction, and certain movements of the eyes and of the hands, are of this kind. These are frequently suspended during the course of a malady, and their return is amongst the first harbingers of returning health.

I have repeatedly known the power over the lower extremities or over one arm or leg to be greatly diminished. This affection will naturally excite alarm and immediate attention.

III.—OF THE SLEEP.

How many things claim our attention in relation to sleep, in infancy! In the first place, it is during sleep that the physiognomy of infants is most expressive of the milder mor-

bid sensations. In its waking hours, the infant's attention is diverted from its bodily sensations, being attracted by external objects, such as loud noises, or brilliant lights. But during sleep the mind, and consequently the countenance and the gestures, are impressed by the internal sensations, and by them alone.

It is on this principle that grinding of the teeth, a symptom highly important to be noticed at every period of life, is scarcely observed except during sleep.

Watch the infant's countenance, then, during its sleep. Its expression will be happy, or variously impressed with smiles, if it be well; or it will indicate pain or other suffering, if it be indisposed. Sleeping and dreaming are inseparable. Dreams are impressed on the infantile countenance legibly enough, and thus the attention may often be early excited to some insidious malady, so as to lead to the prevention of diseases which may not admit of cure.

The countenance during sleep quickly reveals uneasiness or pain of any kind. The brow is contracted, or the mouth is drawn, or both. The first denotes pain and affection within the head; the second, pain of the bowels; the last severer pain, and this, generally, in the bowels.

Similar observations may be made in regard to the gestures. In health, the sleep of an infant is tranquil and composed. As indisposition creeps on, the infant begins to evince its uneasy sensations by disturbed postures and frequent startings.

During sleep the respiration and the circulation become less perfect. There are fewer respirations in a given time. In deep sleep, imperfect respiration takes place for a time, and then a deeper inspiration or sigh is drawn to supply the previous deficiency of this function. There is no doubt, too, that the faculty of producing heat, and consequently the power of maintaining the temperature, is less during sleep.

A remarkable modification of the functions during sleep, is that which obtains in regard to the function of the skin, a change observed in all ages, but especially during infancy. The transpiration is much freer than in a waking hour. There is sometimes even profuse perspiration. The skin is moist,

and the forehead and neck are frequently studded with globules of perspired fluid.

On both these accounts, exposure to cold is trebly injurious and dangerous during sleep. The temperature is not only reduced, and the system enfeebled, but frequently there is an attack of inflammation of some internal organ, from exposure under such circumstances.

Even adults are apt to become chill and to take cold, on falling asleep amidst circumstances of exposure to cold or damp, the pores of the skin being open during sleep.

Exposure to cold, on the other hand, induces a disposition to sleep, a sort of reciprocity of action and influence observed in other circumstances, and especially in regard to sleep and the process of digestion.

I have frequently observed the slightest degree of a febrile paroxysm in infants and young children during sleep. There is a degree of chilliness or of proneness to it, then a flush, and lastly, perspiration. In this respect infancy seems allied to some morbid states of the system, such as those observed in weakness, and in tuberculous affections.

I have already adverted to the reciprocal influence between sleep and digestion. Unlike the respiration, digestion is more energetic during sleep. Sleep, in its turn, is induced by the digestive process. The well-known experiment of Sir Busick Harwood illustrates this proposition. Two dogs were fed, and whilst one of them was left to repose and sleep, the other was led to the chace. The digestion of the former was found to be perfect; that of the latter, scarcely to be effected at all.

Infants are always inclined to sleep after being fed. This association between sleep and digestion should be carefully fostered. After the lapse of due intervals, infants should be habitually fed and put to sleep. I have no doubt that similar associations might be effected between feeding and the evacuation of the bowels—a point of the utmost importance to the growth, nutrition, and well-being of infants.

Infants pass much of their time in sleep, especially during the first weeks after birth. Subsequently, each period spent in

sleep augments, whilst each interval always grows longer, and that in an augmented proportion.

IV.—OF THE BREATHING, AND OF THE BEAT OF THE HEART.

We should frequently apply our ear to the chest of the infant, and listen, and accustom ourselves to the natural state of its respiration, and of the beat of its heart. We shall then be enabled to detect any change in them.

Much may be learned from the pulse of an infant; but much more from the respiration, and from the pulsation of the heart. It is from the latter, indeed, conjoined with the condition of the countenance,* that we are supplied, in infants, with that knowledge which the pulse affords in adult age.

Fever accelerates the respiration. It also adds to the frequency, sound, and impulse of the heart.

In inflammation of the air-tubes, we may, by an attentive ear, often detect different rattles, or "*râles*," as the French call them, in the breathing. These chiefly resemble what is usually termed a rattling, or wheezing, or the cooing of the turtle-dove. Sometimes the inspirations are checked by pain. Sometimes the breathing is less audible on one side of the chest than the other: this depends on inflammation of the substance of the lungs, or effusion of water into the chest.

Besides the ear, much is to be learnt by the eye, in regard to the respiration. Sometimes an infant breathes more with one side of the chest than the other; sometimes more with the chest than with the belly, or more with the belly than the chest. There is generally inflammation or disease in the part least moved.

And here I must observe that it would be highly advantageous that the infant should be brought to its physician, so loosely clothed, that its chest and belly may be the most easily and accurately examined.

In some cases of great debility and exhaustion, the infant is

* See page 107.

apt to arrest its breathing at the end of each respiration. In other instances there is a slight moan, which is of serious omen.

I have said nothing of cough, because this is observed even without watching, and cannot be neglected.

V.—OF THE CRY.

To cry may be justly said to be the first act of that life, which the infant begins to live on entering upon this vale of tears. The sages amongst the tribe of nurses are never so satisfied as when the infant gives a lusty cry.

They have much reason for this. By the strength of the cry we may judge of that of the infant; and by its freedom, of the healthy condition of the most important of the vital organs. Malformation or disease of the heart or of the lungs, would effectually arrest or modify the infant's cry. To cry loudly and freely is therefore an unequivocal sign of health and vigour.

Perpetual crying, especially the perpetual recurrence of crying in infants not wont to cry much, must, on the contrary, always be taken to denote some continued, or recurrent, uneasy or painful sensation. This fact being clearly perceived, our attention must be forthwith directed to discover its particular source or cause.

Violent crying denotes, of course, violent pain. But it is frequently the mere effect of passion; the discerning physician will, however, readily perceive the difference. In some instances violent crying has led to convulsions.

Some children will hold their breath in crying passionately until the recovery of it seems doubtful, and the face becomes livid. To remedy this, a simple mode has often been found to answer, viz. plunging the child's hand into cold water. This induces gasping or sighing, and so the breath is fully drawn.

As crying is excited by other pains, so it is checked by pains of an inflammatory character, whether seated in the head, chest, or belly.

The crying is also sometimes checked, apparently by the occurrence of a sense of suffocation from the violence of the effort itself; in other cases, as in disease of the heart, the crying is checked still more promptly and suddenly.

Sometimes the infant is literally too feeble to cry.

In some cases the peculiar sound of the cry is the first indication of croup, or of the *croup-like convulsion*.

In other cases, the voice or cry becomes husky. This takes place in cases of an aphthous or erythematous condition of the larynx; it is also one of the symptoms of exhaustion.

Moaning requires no description. It is not likely to escape the notice of a tender parent.

These observations may be taken as useful hints. Still it is the habit of carefully observing every *change* in the little infant, which is what I would most earnestly recommend to be cultivated. Many of these changes are very important and easily detected, yet too slight to admit of description. If the child cries as it did not, be assured that it is not well. The cause of this change must be anxiously sought.

VI.—OF THE TONGUE AND BREATH.

Any change in the breath of the infant cannot fail to attract our notice. Such changes depend on the condition of the internal mouth, or of the nostrils, and almost always indicate also a disordered condition of the stomach and bowels.

When the breath of an infant is affected, it is usually acid, rather than foetid, as is observed in adults. When the breath in children is foetid, it is frequently from the disease of the gums termed canker. At a later period, the breath becomes tainted from disorders of the stomach and bowels.

The condition of the tongue is not so obvious. It will always be found white and loaded. But these appearances are increased by disorder, and others are added. The tip is very apt to become dry during febrile complaints; and the papillæ of the tongue become prominent, and appear through the white load, in some cases of protracted disorder.

In scarlet fever, the papillæ of the tongue become enlarged

and prominent, presenting numerous red points, whilst the tongue itself is observed to be red, and the throat to be covered with efflorescence.

The tongue, internal mouth, and throat are frequently aphthous in infants.

VII.—OF THE SKIN AND GENERAL SURFACE.

To prevent repetition, I may refer to what has been already described under the head of "The Countenance," for some observations which might otherwise have had a place here.

[The colour of the skin should be that mixture of white and red, which is called flesh colour, the white being in greater proportion, and equally spread over the surface of the body, having a mottled appearance, or what nurses call sausage colour; variations from this are less favourable. A very red skin is indicative of a predisposition to inflammatory complaints, while a pale skin is evidence of a sickly infant.

A healthy skin should be firm and smooth, and when a fold is pressed between the thumb and fingers it should possess tone or the power of ready readaptation. It should also be cool and plump; not fat, for fatness denotes that the nourishment is in over proportion to the exercise taken, while a lean and flabby skin denotes the opposite of this.]—H. D.

The first rule in regard to the general surface, is, in *every* instance of indisposition, to examine and watch carefully for eruptive appearances on the skin.

I would particularly observe that the slightest eruptions of the more chronic character should also attract attention. They always depend upon some indisposition;—some affection of the stomach and bowels, or of the system generally. The various "gums," as they are popularly termed, the eruption of boils, or of whitlow, the occurrence of excoriations behind the ears, or of eruptions about the edge of the eyelid, and within the orifice of the nostrils, always denote some more deeply-seated indisposition as their cause.

Any unusual heat or dryness of the skin, will not fail to

attract attention. Unusual coldness or dampness should also be immediately noticed, and carefully watched.

The appearance of chilblains upon the hands or feet, should always be understood to indicate the necessity of still greater care in avoiding cold.—M. H.

SECTION IV.

RATE OF MORTALITY OF CHILDREN.

From a note in Dr. Smith's letters, it appears that the average of births annually within the bills of mortality for ten successive years was, *at the time when he wrote*, 16,283; out of which were buried under five years of age, 10,145 (about 62 per cent.) and from amongst these 7,987 were under two years of age. So that, of the children born in London and its environs, about 49 per cent. died under two years of age, and of the survivors, about 26 per cent. under the age of five years. Dr. John Clarke, complaining, however, of the absence of the data requisite for correct calculation, concludes, from the average of deaths, &c. for forty years, ending A. D. 1799, that out of 856,285 children born in London, 281,408 died under two years of age, and 113,393 between the ages of two and ten. In other words, that between 33 and 34 per cent. of children born in London die under two years of age, and of the survivors, 20 per cent. under ten years of age.

Dr. Underwood observes, that for several years ending A. D. 1811, of children born within the bills of mortality, 6 in 16, or $37\frac{1}{2}$ per cent. died under two years of age. These calculations are, probably, far from accurate: assuming them, however, to approach correctness, they furnish us with proof of

how hazardous a period that of infancy was, and of the gratifying fact that the chances of life in early years are now greatly increased.

We have now at our command the returns contained in the "Annual Reports of the Registrar General," which enable us to determine with great exactness all facts of this nature, which could only be approximated to by the gentlemen above-named. On referring to the fifth of these reports, we find, page 34, that out of 45,512 deaths in the metropolis of all ages in 1841, 13,607, or about 30 per cent., were of children under two years of age, and 6,565 between two and ten years. The total number of births registered that year in the metropolis was 57,342.

Now applying to these returns, and to similar ones for the districts mentioned below, the method upon which the "English Life Table" (page 23) is founded, we shall find (pages 23 and 36) that

Out of 100,000 children born in	England and Wales.	Surrey.	Liverpool.	Metropolis.
There will remain alive at the } end of 1 year }	85·369	87·771	74·710	83·734
..... 2 years	80·102	84·072	62·934	75·770
..... 5 years	74·201	79·199	52·198	68·329
..... 10 years	70·612	75·423	48·211	64·921

We find, therefore, that of all the children born in the metropolis, between 24 and 25 per cent. die under the age of two years; and of the survivors, between 9 and 10 per cent. die under five years; and between 14 and 15 per cent. under ten years. These proportions it will be with satisfaction remarked are greatly below the very alarming ratio of early mortality, said, as we have shown above, to have been the case formerly. It appears further from the above table, that of the children born in England and Wales, between 14 and 15 per cent. die under one year of age; about 20 per cent. under two years of age; about 26 per cent. under five years, and about 30 per cent. under ten.

EFFECTS OF REMEDIES.

It will be useful before entering on the consideration of the diseases of children to offer some remarks on the effects of remedies upon them.* It is well known that children will bear a much larger proportionate dose of purgative medicine than adults; whereas with narcotics it is quite the reverse, and opium in particular must be given in a much smaller proportionate dose.

To adapt with accuracy the various doses applicable to the different ages of children, attention must be paid to the several medicines themselves, and the action of each dose watched so as to suspend the use of the medicine when the desired effect is produced, or to hasten its repetition when this is too long delayed.

The number of medicines which may be usefully employed for children is not great, neither does the mode of their administration admit of being much diversified, as they require

* Most medicines act with great energy on children, and some have a peculiar effect on them, different from that which they exert on adults; attention should, therefore, be paid to these circumstances, as well as to the proportionate doses. The following table, originally drawn up by Gaubius, although not always to be implicitly followed, may be considered a sufficiently useful guide to the doses of medicine appropriate for children:—

Ages.	Proportional Quantity.	Doses.
Adult.	Suppose the dose to be <i>one</i>	or 1 drachm.
Under 1 year.	Will require only	$\frac{1}{12}$ — 5 grains.
2		$\frac{1}{8}$ — 8 grains.
3		$\frac{1}{6}$ — 10 grains.
4		$\frac{1}{4}$ — 15 grains.
7		$\frac{1}{3}$ — ℥j. scruple.
14		$\frac{1}{2}$ — half-a-drachm.

generally to be exhibited either in the form of powder, or that of liquid. It is desirable that they should be made agreeable to the taste by sweetening, and where we have a choice, we should select those which have the least disagreeable odour, and least nauseous taste, and avail ourselves of the most convenient form and least bulky dose: for the last mentioned reason, very light powders are inconvenient. When heavy or insoluble medicines are selected, they should be exhibited in a vehicle sufficiently consistent for their suspension, so as to ensure the whole being taken; or if not bulky, they may be combined with a small portion of sugar, and laid on the tongue, after which a little drink may be given.

From a tea spoonful, or drachm, to a dessert spoonful, or two drachms, is as much as should be given as a dose for a child under two years old; and where precision as to the quantity is very important, and the sizes of spoons differ, it is better to give a draught, or the third or fourth part of a mixture.

Change of diet, and some alteration in the mode of management, or simple domestic remedies judiciously applied, will often be all that is requisite in many of the lesser ailments of children. When active remedies are required, it is important that they should be properly employed, and their administration and effects carefully watched. (From the careless manner in which medicine is sometimes given, the best intentions are defeated, and much time lost.) As soon as the desired effect is obtained, milder means should be resorted to, or the case left to the sanative powers of nature, which are very great, particularly where the strength has not been unduly impaired by too copious depletion or protracted disease; and under these circumstances the repose of children should not be disturbed by the over anxiety of parents or nurses, tranquil sleep being one of the most important of the restorative means employed by nature.

The applicability of medicines, and the mode of their administration in particular diseases, will be found under the heads of those diseases. For much useful information on this subject, we would also refer the reader to Dr. Ure's "*Materia Medica*," for the treatment of diseases of children.

BLOOD-LETTING.

Abstraction of blood is one of the most powerful remedies we possess for subduing inflammatory diseases; it is also one of the most delicate, and requires great consideration in its use. Wherever it is requisite, it is important that it be employed at the onset of the disease, not only on account of the power it possesses of controlling inflammatory action, but also on account of its influence in facilitating the operation of other remedies. It is applicable to the earliest state of infancy, provided it be proportioned to the urgency of the symptoms and to the powers and susceptibility of the patient. "*In mittendo sanguine non tam annos medicus numerare, quam vires ægrotantis estimare debet.*" Celsus, lib. ii. cap. 10, p. 78.

Children bear the loss of blood very well once or twice, although they do not so well sustain more frequent bleedings. It is therefore of advantage that, if possible, a sufficient quantity of blood be withdrawn in the first instance, or at least at two bleedings, than by repeated smaller evacuations of blood.

The free abstraction of blood is advisable in all severe cases of inflammation seated in the parenchyma of any organ, or in a serous membrane; it is to be used with more reserve when a mucous membrane is the seat of disease, and still more caution is required when membranous and parenchymatous inflammations are combined, as in the broncho-pneumonia of infancy—the frequent and destructive maladies of infancy and childhood. It is also most imperiously called for in decided cerebral inflammation, or when determination of blood to the head is clearly manifested in convulsive affections. On the other hand, bleeding must be used with caution in the low and asthenic form of cerebral irritation, or what has been denominated, sensitive erethism of the cranial brain; and one of the varieties of hydrocephalus, such as usually occurs in scrofulous habits; and in those cases where cerebral irritation arises from exhaustion, the frequent precursor of coma and convulsions, bleeding is most decidedly contraindicated. In inflammatory affections of the intestinal mucous membrane, where well

marked, only moderate bleeding is advisable ; the application of one or two leeches in these cases is often followed by extreme prostration.

In febrile diseases, where the symptoms run high, when accompanied by great tenderness of the epigastrium, or affections of the head or chest, a timely bleeding will frequently cut short the disease, and spare the necessity of a protracted use of purgatives, thus best preserving the strength of the patient, as may be often witnessed in remittent fever.

In the course of diseases, considered purely spasmodic, inflammation sometimes unexpectedly supervenes; thus in the progress of whooping cough, there is no period at which pneumonia may not occur, requiring prompt abstraction of blood.

MODE OF BLOOD-LETTING.

In the infant the quantity of blood circulating through the vessels is small relative to their size, while the development of the vascular system in the internal organs is proportionately much more considerable. Hence, although internal congestion be induced, terminating in inflammation, abstraction of blood by venesection is seldom resorted to at this early age. Indeed the large veins are so imbedded in gelatinous fatty matter till after the second year, that they cannot be easily opened. Leeches can always be applied; and in infancy and early childhood bleeding by them is equivalent to a general blood-letting. After the second year, when active inflammation exists, it is better to employ venesection. If there still be any difficulty in bleeding from the arm, blood may be taken from the jugular vein, which will then be sufficiently large. It has been recommended to open a vein on the back of the hand, or dorsum of the foot; but it is not always easy to get a sufficient quantity of blood from these sources. If bleeding be again necessary, that by leeches will generally be sufficient. It is sometimes recommended to apply leeches to the foot or arm of infants suffering from inflammatory disease, because the bleeding can be better controlled in these parts by bandages; but the greater benefit produced by the depletion near the affected

organ, leads us to apply them in preference on the sternum, or under either clavicle, in affections of the chest, or on the temples, or over the mastoid process, or base of the occiput, in affections of the head. There is rarely any difficulty in arresting the hemorrhage by a small compress over each bite, and adhesive plaster; or, this failing, the application of the nitrate of silver scraped to a point to each leech bite never fails. Each leech on an average will take about three quarters of an ounce of blood. Bleeding by leeches has the advantage, from the gradual manner in which the blood flows, of not being so liable to induce collapse in young children. Where practicable, the leeches should be applied over a bone, in order that pressure may be firmly made after they are removed, to arrest the bleeding, should it be required. It is better to apply them by daylight. The parts to which they are applied should previously be sponged with hot water, for the two-fold purpose of cleansing the parts from all foreign bodies, and to invite blood to the surface by stimulating the superficial vessels. The leeches should be withdrawn from the water for about a quarter of an hour, and allowed to creep over a dry cloth before being applied. They should be applied with a *clean, dry* bare hand. If they be slow in biting, a little warm milk, or sugar and water, may be dropped on the part, or minute punctures may be made in the cuticle, or the leeches may be dipped a moment in beer. If they be still tedious, they should be covered on the part with a piece of gauze, and a glass inverted over them. It is useless to continue these attempts long with the same leeches; for if they subsequently do bite, they are so exhausted by the previous handling as to disable them from sucking effectually.

Leeches are commonly preferred to cupping, as being thought a less severe remedy, though in fact they frequently prove more severe and troublesome. The chief objections in the case of leeches are—1st. the difficulty of applying them; 2nd. the length of time that is consumed while they are drawing, and afterwards while a sufficient quantity of blood is flowing from their orifices—a length of time during which the active employment of other indispensable remedies is prevented; 3rd.

the great uncertainty as to the quantity of blood obtained,—this being sometimes so inconsiderable as not at all to answer the purpose; at other times so great and uncontrollable as to exhaust the patient excessively. Instances are not rare in which, from the neglect of putting a timely stop to the flow of blood, infants have been actually destroyed by the gradual, but overwhelming loss.

Whenever a good cupper is to be met with, this mode of procuring blood is greatly to be preferred. He can apply his cups upon any part that may be required, and will draw blood from infants, even during the month, with great address and expedition. He will take away the exact quantity prescribed, even to a quarter of an ounce. The operation is quickly over, and of course the advantage of taking away the necessary quantity at once is obtained. There is no delay in employing other appropriate remedies, nor is there the fear that, through the practitioner's absence, the child will sink under the profuse discharge of blood, which has sometimes happened, unobserved or unattended to, from the bites of leeches. In determining the quantity of blood to be taken away, so much depends upon the peculiar case to be treated, as well as upon the constitutional and relative strength of the child, that no precise rule can be laid down. The attending practitioner must exercise his best judgment in directing the proper quantity, and he will often find it expedient personally to superintend the operation of cupping, in order to ensure the complete effect which he expects from the loss of blood. It may, however, be useful to remark, that during the first six weeks of life, from five drachms to an ounce of blood will commonly relieve the inflammatory symptoms; from six weeks to three or four months, one ounce, or an ounce and a half, will answer the purpose, and in this proportion bleeding may be adopted at subsequent periods of infantile life.—S. M.

I must first, once for all, protest against the usual plan of applying leeches in infancy, and allowing the bites to continue to bleed. Nothing can be more indefinite—nothing more replete with danger. Most of all, it is dangerous to apply leeches late at night; the bleeding may go on unobserved and

unsuspected, and precipitate the little patient into a state of immediate sinking.

The proper mode of abstracting blood in infants or children, whether by leeches, cupping, or venesection, is to place the little patient upright, and watch the countenance. On the very first indication of pallor, or faintness, the flow of blood must be stopped. For this purpose, the leeches, or the cupping-glasses, are to be removed, or the vein secured.

The effects of exhaustion in infants and children are seen chiefly under three forms—1. That of irritability; 2. that of stupor; and 3. that of convulsions.

Of the state of irritability the following case, though too briefly sketched, presents an interesting example.

A little patient was reduced by too copious and repeated bleeding for croup. There supervened a state of irritability of temper, so that, when much exhausted, it made great efforts to bite, scratch, and beat its attendant. This state of agitation continued until the powers of life were gradually and entirely exhausted.

The state of irritability frequently, though not always, leads to that of stupor. Of the latter I have given so many instances in Appendix II. to Part First, that it appears unnecessary to add more here. Yet I cannot refrain from inserting the following interesting account from my friend Mr. Cox, relating, as it does, not only to the symptoms of exhaustion, but to the use of bloodletting.

“MY DEAR SIR,

“The subject you are now illustrating is of so important and interesting a character, and the examples you have already given in your tract are so striking, that it hardly needs any fresh case to confirm the truth of your statements.

“The state of exhaustion from loss of blood was most strongly marked in the case of my little boy. At five months old he was one of the strongest and most vigorous infants I ever saw; between that and the age of six months, he was attacked on a Sunday with croup of a highly inflammatory character, which was relieved by the application of six leeches to the throat, and

calomel and ipecacuanha given every three hours. On the succeeding day (Monday) he was so much better, that I had the greatest hopes that the disease was vanquished ; but in the night of Monday, he was attacked with symptoms of inflammation of the lungs of the most violent character, which were relieved only by the application of leeches, repeated with the interval of a few hours only, till faintness was produced ; this was sustained by frequent doses of the tincture of colchicum and squill.

"The symptoms of inflammation of the chest were thus relieved ; but I need scarcely tell you, that they were succeeded by a state of exhaustion, which was extreme, and resembled hydrocephalus in many of its characteristics. There was a quick, irritable pulse, dilated pupil, insensibility, &c., &c. Although the inflammation had been of so serious a character, that it appeared to my friend, Dr. Bernard, of Clifton, and myself, that none but the most active means would save the life of the child ; yet they were employed by myself, anxiously watching for an impression on the disease, and as soon as the breathing became less distressing, and faintness was produced, and the pulse was less strong, hard and vibrating, the depleting means were gradually withdrawn. The state of exhaustion which I have described supervened, and in many symptoms simulated an affection of the head ; yet I was enabled to remove them by gentle stimulants. Had the symptoms of oppression of the brain been met by further depletion, I can have no doubt that the result would have been fatal. He had repeated attacks of croup and inflammation of the lungs during dentition, but is now a strong, healthy boy.

"I am, my dear Sir,

"Yours very faithfully,

"J. C. Cox.

"33, Montague-square.

"Nov. 21, 1829."

It will be obvious from this remark, that the various attempts to state the quantities of blood, which may be taken from children, in their several ages, must have proceeded upon the most

vague conjectures. This is further proved by the very various statements made upon this very point by different writers. In fact, were such a scale made, it must be made distinctly for every disease, in reference to every age. Something of this kind I hope to effect, with the other objects already pointed out, in the course of my continued investigation of the effects of the loss of blood; but it will be obvious, that this can only be done by long and uninterrupted attention to the subject.

I have, however, already observed sufficiently to be enabled to recommend that, in every case of general bloodletting, whether by leeches, cupping, or the lancet, the little patient be supported in the erect position, its countenance carefully watched, and the flow of blood arrested on the very first appearance of pallor.

The quantity of blood which thus flows will vary with the character of the disease, precisely as I have described in relation to adults.

The boundary which it would be dangerous to pass, is accurately fixed; and the result observed becomes accurately diagnostic of the character of the disease.

It will be observed that I esteem the application of leeches and of cupping, in infancy, to be a mode of general bloodletting, as well as the use of the lancet. The precise number of leeches applied will regulate the rapidity of the detraction of the blood; their prompt removal, and the immediate closure of the leech-bites, must be effected, on observing that the system is brought under the influence of loss of blood. The same operation applies to cupping, and, *à fortiori*, to the lancet.

I am persuaded that this view of the subject, simple as it is, will reflect a new and important light upon the whole subject of the nature and treatment of the diseases of infants and children.—M. H.

PURGATIVES.

Aperients are capable of fulfilling many indications, and consequently can be made to contribute in an eminent degree to the removal of a multitude of morbid affections. When the

bowels have extraneous bodies lodged in them—when their natural contents are unduly retained—when these contents possess acrid qualities, their prompt evacuation by aperients is obviously indicated. In every general disorder of the system, likewise, their use, under proper modification, is indispensable. Many diseases, accompanied with torpidity of the bowels, and a bad state of the dejections, will not yield to the occasional exhibition of a cathartic; they require a systematic continuation of mild laxatives, till the excretions lose their unhealthy odour and appearance, and the regular condition of the bowels is restored. But in order to produce manifold and beneficial effects, purgatives require to be judiciously administered, and much circumspection and judgment are required in selecting the most appropriate opening medicine on every occasion. The indiscriminate exhibition of purgatives to children is always pernicious, and often extremely dangerous.

Where children are properly managed as to diet, the necessity for this class of medicines is not frequent, and an overloaded and deranged state of bowels is not very common. A judicious variation of food in elder children would, on many occasions, save the necessity for physic, and, in infants, an enema of warm water, or the insertion into the rectum of a piece of soap rolled to the size of the little finger, or of a roll of twisted paper dipped in oil, would be found sufficient to obviate occasional costiveness.

Aperient medicines are either laxatives or purgatives—the former being mild in their operation, and merely evacuating the contents of the intestines; the latter more stimulant, causing an increased secretion from the exhalent vessels of the intestines, and even extending their operation to the neighbouring viscera.

For simply evacuating the contents of the intestinal canal, castor oil is prompt in its action, and usually operates without causing much griping or uneasiness; it is more efficacious given by itself. It is particularly applicable to constipation from indurated fæces, or where acrid secretions have accumulated in the bowels, or where other purgatives have failed to act with sufficient expedition. Castor oil is highly irritating to the

mucous membrane when in a state of excitement or inflammation, (as in dysentery,) and is, therefore, not to be indiscriminately given in the bowel complaints of children.

Manna is a mild aperient, and is said to be somewhat diuretic; it admits of being given with the food, but is hardly to be relied on by itself, unless taken in large quantities,—combined with other aperients, it increases their efficacy, and especially that of *magnesia*.

Magnesia, from its antacid and sedative properties, is well adapted for infants and children, and the prevailing ascendency of the stomach and intestines, insures its operation. Dr. A. T. Thompson observes, that the irritability always attendant on dentition, is greatly allayed by the *magnesia* operating on the denticular nerves of the stomach. It forms, with the acid of the alimentary canal, an active aperient salt. It may be given with the food over night, and its action ensured, as recommended by Dr. M. Hall, by an enema the following morning. Saturated with lemon juice, it forms an excellent and mild aperient, and will frequently be borne on the stomach when other laxatives are rejected.

Rhubarb, as a mild aperient, is of great value, and one of the best and most manageable that can be used for children, since it not only operates as an evacuant of morbid secretions and accumulations, but also restores the tone of the intestines, invigorates digestion, and acts as an alterative on the constitution at large. It acts most powerfully when given in powder; but the infusion is sufficiently active for a child, and perhaps more convenient, as the taste can thus be better disguised. It is usually given combined with *magnesia*, which corrects the griping tendency of the rhubarb, in the proportion of two parts of the former, to one of the latter, with some aromatic powder. Rhubarb may be combined in the same proportion with sulphate of potash, and thus forms an excellent mild aperient.

An elegant substitute for rhubarb and *magnesia*, in the liquid form, may be made by triturating finely powdered rhubarb for a few minutes with 'fluid *magnesia*,' straining the liquor, and adding a little syrup of ginger. A drachm of coarsely powdered rhubarb, macerated in three ounces of Brandishe's alkaline

solution, also furnishes an excellent preparation, at once more tonic and aperient than the simple infusion. These combinations of rhubarb with an alkali, particularly when improved by the addition of a bitter, as calumba, are of extensive utility in that large class of disorders incident to childhood, in which bad digestion and torpid bowels are accompanied with general delicacy of constitution."—Evanson and Maunsell.

The following is a useful alterative aperient; each half ounce contains five grains of rhubarb and the same of soda.

R.—Pulv. rhæi., sodæ. sesq. carbonatis ā ʒss.

Aq. menth. P.P. ʒii. ʒvi.

Syrupi ʒii.

Ft. mist. Cap. cochl. magn. vel medium om. nocte.

Saline Aperients, or neutral salts, are distinguished by the serous character of the evacuations which they produce, and are particularly serviceable in the febrile and inflammatory affections of children. They serve powerfully to deplete the system, and occasionally supersede the repetition of blood-letting. It must be borne in mind, that although they may cause the evacuations of copious liquid stools, the bowels may not be emptied of their solid contents, and hence these hydragogue purgatives are better preceded by some medicine which more certainly evacuates the bowels of their solid contents, as calomel; or they should be given in combination as with rhubarb or senna. Those most used for children are sulphate of magnesia, tartrate of potash, and sulphate of potash; the first may be very usefully combined with saline medicines, increasing their efficacy as refrigerants; and in doses of from five to fifteen grains it is a very mild aperient. The tartrate of potash, in combination with senna, the taste of which may be disguised with extract of liquorice and some aromatic tincture, forms a most efficient purgative.

The sulphate of potash is more persistent in its action than the other salts. In combination with rhubarb it is in much esteem as an aperient, and its continued use more directly in-

fluences the glandular secretions. The late Dr. Fordyce eulogised it in the visceral obstructions of children.

Various other of the neutral salts may be advantageously given. The phosphate of soda was formerly much in repute as a tasteless purging salt, and may be given disguisedly in food, where there is much difficulty in getting children to take medicine.

OF THE MORE ACTIVE PURGATIVES.

Mercury.—Mercurial purgatives appear to possess, in an eminent degree, the power of exciting the functions of the liver, and thereby occasioning an influx of bile into the intestines. Calomel is the preparation most frequently employed with this view in the case of children—for whom it is singularly eligible, from its tastelessness and small bulk. There are few medicines more valuable, but there is none of which the indiscriminate use has led to more pernicious results. Where the object is to procure the discharge of morbid secretions and fæcal collections, it may be given in large doses, although it sometimes produces nausea.

To an infant two months old, a grain, or a grain and a half; from two to twelve months, two, three, or four grains may be given. Where small doses are employed, neither purging nor vomiting are produced, but the patient is violently griped. It is preferable, under these circumstances, to give calomel uncombined with other purgatives, as it is less apt to produce nausea. It may be followed in an hour by a dose of the compound senna mixture, or of ol. ricini, or pulv. jalapæ compos., or pulv. scammoniæ comp.; should these not succeed, it will be advisable, before repeating active purgatives, that an enema should be administered, as the intestine is sometimes so blocked up with hardened fæces, that nothing can pass. On less important occasions, calomel may be usefully combined, where acidity abounds, with magnesia,—or, where spasm is present, with some sedative, as hyoscyamus, or opium, or pulv. ipecac. comp. Where milder means only are requisite, or where acidity is present, with or without diarrhœa, the hydrargyrum

c. creta is a most excellent preparation, and may be given in larger doses than the calomel.

Senna is an excellent active purgative, and a most efficient one in febrile and inflammatory affections, for the purpose of removing mucous sordes from the first passages of phlegmatic, torpid children. It is best given in the form of infusion, and the most eligible mode is in combination with some saline aperient, of which we prefer the potassæ tartras, which diminishes the griping property of the senna; indeed, in this way, they increase each other's efficacy. The extract of liquorice disguises its taste, and an aromatic, with volatile alkali, form a useful addition, as—

R—Potassæ tartr. ʒij.
 Infus. sennæ comp. ʒxv.
 Ex. glycyrrh ʒss.
 Tinct. card. comp. ʒj.
 Sp. ammoniæ arom. ℥xij.
 Ft. mist. ʒij. ad ʒiv. pro dos.

Infusion of senna may be advantageously combined with some tonic or aromatic bitter, as the infus. gentianæ comp., or infus. aurantii comp. The cold infusion is recommended in cases where a continuation of it is required, or where it is wished to give it disguisedly. The cold infusion is prepared by macerating ʒj. of senna leaves in ʒj. of cold water, which should stand all night, and with the strained liquor prepare coffee in the morning.

Jalap is a stimulating purgative which acts principally on the colon, and promotes a copious discharge from the exhalents of the mucous surface. In moderate doses it purges without griping. It may be usefully combined with any other purgative. Ipecacuan is believed to add to its purgative effect, without losing its own peculiar action; hence, the combination of these two medicines form a suitable purgative during inflammation of the chest. Its combination with bitartrate of potash, as in the pulvis jalapæ comp., is an excellent form where it is desirable to act largely on the bowels, and to promote serous

discharges from them, as in some cases of dropsical effusion, and particularly after scarlatina.

Scammony is a very active and irritating purgative. When given alone, it is apt to irritate both the bowels and fauces, and to cause severe griping; it should therefore always be given in combination with other purgatives. When the bowels are torpid, and loaded with slimy mucus, the compound powder of the pharmacopœia, or equal parts of scammony, rhubarb, and sulphate of potass, with some aromatic, is a convenient form for its exhibition.

Aloes acts more particularly on the large intestines, without making the stools thin. It has a particular action on the liver, either as a substitute for bile, when deficient, or as causing its flow. There is no purgative more useful when judiciously employed, either as a vermifuge or where a continuous and slow stimulant action is required.

The powder of the watery extract, the decoct. aloes comp., or the tincture, are the most appropriate for children.

In some cases of habitual costiveness, the following external applications have been found beneficial :—

R—Pulv. aloes ℥ij.

Auxunge ℥vj. M. ft. ung.

Or

R—Lin. saponis ℥vj.

Tinct. aloes comp. ℥vj. M. ft. embrocatio.

A portion of either to be rubbed on the abdomen from five to ten minutes every night at bed-time.

ENEMATA

Are most valuable remedies. A nursery should never be without an apparatus for administering enemata, of which perhaps the most ready is a small elastic gum bottle, armed with an ivory pipe, or Reed's enema syringe, which is a most useful instrument. The efficacy of enemata is much modified by the

impulse and *quantity*,—by which we obtain the stimulus of distension, thus overcoming those obstinate obstructions which have resisted more common measures. When administered in large quantities, and with considerable impulse, they rarely reach beyond the sigmoid flexure of the colon; nevertheless the local impression is so powerful, that it is at once extended, by the medium of sympathy, through the whole alimentary canal, and very thorough and copious discharges result. Ene-mata are applicable—

1st. To promote the tardy operation of purgatives, or to evacuate the contents of the bowels when medicine cannot be retained, or its repetition is not advisable: for this purpose simple warm water is often sufficient at once to relieve protracted suffering from distended or loaded bowels, particularly if aided by immersion in the tepid bath; or to a small tea cupful of gruel or barley-water, a dessert spoonful of common salt, and a table spoonful of olive oil, may be added.

2nd. To remove ascarides—for which purpose a strong decoction of chamomile flowers, or of the *semen santonici*, are useful.

3rd. To produce *anodyne*, *astringent*, or *carminative* effects. For the first, common starch, with the addition of tincture of opium, is the most ready; for the second, the astringent vegetable decoctions, as of oak or pomegranate bark, or weak solutions of alum or sulphate of zinc: for the third, the *mistura fætida*, or a tea spoonful of tinct. *assafœtidæ*, or of *sp. terebinthinæ* may be added to the gruel.

4th. To convey nutriment—for which purpose animal broths or jelly, or the yolk of an egg, may be rubbed down with two or three tea spoonfuls of the *ol. amygdalæ*, and gradually mixed with two or three ounces of broth, or warm milk, with or without arrowroot jelly, may be used.

In administering enemata, the tube should be well smeared with lard or oil, and introduced cautiously into the intestine, and, as it passes up, gradually inclined towards the left side.

As a purgative, the enema may be thrown up in a large quantity and with moderate impulse; as an anthelmintic, it may be used in equal, or even larger quantity, but should be administered slowly; for *anodyne*, *astringent*, or nutritive pur-

poses, it should be injected in moderate quantities, and gradually, as the object is to insure its retention.

In cases of distention from flatus, benefit sometimes results from allowing the ivory pipe, detached from the bottle or tube, to remain in the anus, thus leaving a free outlet for the escape of gaseous matter.

The proportionate quantity of fluid for infants and young children, is from one to four ounces; for children from two to five years old, from four to six ounces; and for older ones, half a pint. The dose of the active ingredient of an enema has been estimated at triple that which is taken by the mouth; but we believe a much larger proportionate quantity may be sometimes administered with benefit.

It has been observed, that the intestine of infants and young children loses its tone by over distension, which happens when several enemata are administered in succession, and retained; Relief may in these cases be afforded by passing up a large elastic gum catheter.

EMETICS.

The facility with which infants vomit may be regarded as a wise provision of nature; hence, emetics constitute an important article in the treatment of their diseases. The advantage to be gained by their use may depend on their *primary* or *secondary* operation, that is to say, upon the mere evacuation of the stomach, or on those changes which are induced in distant parts from sympathy, or on the neighbouring parts from the mechanical action of the diaphragm and abdominal muscles, by the pressure of which the gall-bladder, and hepatic ducts are emptied of their contents, while, by a similar pressure on the thoracic viscera, expectoration is promoted, whereby the bronchial tubes and air passages are relieved of viscid and redundant secretions.

The first impression made by emetics is one of diminished power; the second one of equalization; for after the nausea and vomiting have subsided, an increased energy is communicated to the nervous and sanguiferous systems, and the blood

circulates more freely through the capillary vessels, and thus the functions of absorption and exhalation are promoted.

Vomiting, when produced by the operation of a mild emetic, does not appear to exhaust the excitability of the stomach, but, on the contrary, to increase its tone; for we generally find the process of digestion is carried on more vigorously afterwards, although it is probable that, by frequent repetition, a different result would be obtained, and the action of the stomach become inverted by slight stimuli.

Emetics should not be given in a congested state of the vessels of the brain, or in plethoric states of the body, until the vascular fulness has been relieved by depletion; for during the act of vomiting, in consequence of pressure applied to the descending aorta, and the interrupted circulation through the lungs from impeded respiration, the blood returns with difficulty from the head; neither should they be employed where there is much gastric affection, or in cases of *extreme debility*.

Emetics are often of great utility during the progress of remitting or other fevers, by inducing a crisis, or giving a favourable turn to the complaint; and in the exanthemata, when the eruption does not come kindly out, they are extremely beneficial, as also in those frequent cases where bronchitis or pneumonia supervenes on measles. In all diseases of the lungs and air passages, emetics are of essential importance for clearing them out, as well as emptying the stomach of morbid accumulations, since children, for the most part, swallow all the matters that ought to be expectorated. Independently of the general utility of emetics in relieving an overloaded stomach, their occasional exhibition is beneficial in scrofulous or delicate children with voracious appetites, but feeble powers of digestion. In these cases, an emetic not only frees the oppressed stomach, but benefits the system at large by the stimulus given to exhalation and absorption, thus aiding in the resolution of strumous deposits.

According to the indications with which an emetic is given for the production of vomiting, with or without causing nausea, our choice of the emetic employed would fall on ipecacuan, tartarized antimony, squill, or sulphate of zinc, which are those in general use for children.

Ipecacuan is very certain and mild in its operation, and may be given either in the form of powder or wine. In addition to its emetic properties, it tends much to control inordinate action of the bowels, while at the same time it acts upon the skin so as to restore the equilibrium of the disturbed functions.

Tartarized antimony.—The potasso-tartrate of antimony has a very depressing effect, and for the most part an increased cutaneous secretion, and evacuation by the bowels is produced by it; hence it is preferred in cases of inflammatory affections of the chest, and also in whooping cough, particularly where there is a deficiency of mucous secretion. It may be given in the form of solution in the proportion of gr. i. to ℥i. of water, in drachm doses, repeated every ten minutes till it operates; or from five to fifteen drops to a tea spoonful of the wine may be given, but more than a definite quantity should not be given (say from gr. i. to iss. of the salt) whether it operates or not, as by accumulation it may exert its depressing effects unexpectedly. It is also as well to let an infant take the breast previous to its exhibition, as it has been said to act as a poison when taken on an empty stomach. For general purposes the combination of emetic tartar and ipecacuan is to be preferred, somewhat in this form:—

R.—Ant. potass. tart. gr. i.
 Pulv. Ipecac. gr. xiii.
 Syrupi ℥ij.
 Aq. destil. 3x. Ft. mist.

One or two drachms should be given every quarter of an hour till it operates. As soon as vomiting has begun, but not before, tepid drinks may be employed to assist the action of the emetic; if given earlier, the emetic becomes so diluted that it will often fail in its action altogether; on the other hand, after vomiting has begun, the stimulus of distension from drink, will increase its effect.

Squill is too stimulating for common use, but is sometimes preferred in bronchial affections. The oxymel may be given in ℥i. doses, or ℥ii. of the vin. antim. potass. tart. may be advan-

tageously added to \mathfrak{z} i. of the oxymel, and \mathfrak{z} i. doses given as directed above.

Sulphate of Zinc acts without producing nausea, and is very prompt in its operation; it is therefore most applicable where deleterious substances have been taken. It may be used in solution, four grains being dissolved in an ounce of water, and \mathfrak{z} i. given every ten minutes till it operates. Sulphate of zinc is highly extolled by Dr. J. Clark in epilepsy, any plethora which may exist being previously removed. When a child has attained the age of four years an emetic may be given, consisting of four, six, or ten grains of the *zinci sulphas*, in half an ounce of an infusion of fifteen grains of *ipecacuan* in an ounce of hot water. The dose must, however, be liable to much variation, according to the age of the patient, and different degrees of irritability of the stomach, and it should be repeated in six, eight, or ten days, according to circumstances.

It is preferable, where their immediate exhibition is not essential, to give emetics in the evening, as their operation leaves a tendency to sleep and gentle perspiration, both of which it may be useful to promote, and also to give them in such doses as shall excite vomiting twice or thrice at moderate intervals.

EXPECTORANTS.

Expectorants are very uncertain in their action, and the majority of the medicines so denominated and exhibited in bronchial and pulmonary affections, are substances which act by exciting an alterative influence on the membrane lining the air passages; and expectoration is by no means an essential effect of their operation. All the emetic medicines before mentioned may, in modified doses, be considered expectorants. *Ipecacuan* is the one in most common use for simple catarrhal affections. It may be given in quarter or half-grain doses, or from five to fifteen minims of the wine, three or four times a day; it is beneficially combined with some sedative, as the *hyoscyamus*, *conium*, or poppy, which tend to allay the irritability of the air passages, and enable the stomach to bear the

expectorant: they are, perhaps, preferable to opium, as being less likely to affect the head, or by checking the cough to increase the embarrassment of breathing. The expectorant powers of ipecacuan are promoted by the addition of calomel, antimony, squill, alkaline salts, &c. Its combination with calomel tends to control inflammatory action, but the use of the latter must be suspended when the bowels are much irritated. The alkaline salts have the effect of diminishing the viscosity of the phlegm, and consequently promoting its excretion; hence the estimation in which the salt of wormwood (carbonate of potash) is held as a popular remedy for whooping cough.

Emetic tartar is a more active expectorant. In acute inflammations, or where there is a deficient moisture in the secretions, or when gastric or intestinal irritation exists, its use is contra-indicated. It is best given as an expectorant in the form of wine, in doses from five to fifteen minims. It admits of the same combinations as ipecacuan; and its beneficial effects are promoted by combination with it. The depressing effects of tartarized antimony when used as an expectorant may be obviated by uniting it with some aromatic tincture.

Squill operates by stimulating the capillary vessels, and its use is consequently contra-indicated during the existence of high inflammatory action, as in acute pneumonia and catarrh. Its employment is most advantageous in chronic bronchitis, particularly where the phlegm is viscid and difficult to expectorate. It is also useful in the sequelæ of whooping cough; it may be exhibited in the form of oxymel, vinegar, or tincture, in preference to the substance, and in combination with the other expectorants. It may be had recourse to sooner, and the use of the others continued a greater length of time, if requisite.

Polygala senega is a stimulating expectorant, and used only in advanced stages of pulmonary disease, or after inflammatory action has been subdued. In such cases, when a dry, hoarse cough remains, attended with some difficulty of breathing, polygala will be found very serviceable. It is very liable to cause purging and vomiting; but the latter result is at times desirable when the air passages are much loaded, and the

strength inadequate to coughing up their contents. The preferable form of exhibiting it is that of decoction, combined with muriate, citrate, acetate, or carbonate of ammonia, antimonial wine, or oxymel of squill. The compound honey of squill, commonly known as Coxe's hive syrup, so highly esteemed in America, combines the virtues of senega, squill, and tartar emetic, and acts by vomiting, purging, and sweat.

DR. COXE'S HIVE SYRUP.

R.—Scillæ, Polygalæ senegæ aa, ℥i.

Aquæ, ℥j.

Mellis despum. ℥ss.

Ft. syrupus cuique unciaë cujus addatur antimonii potassio tart. granum.

Dose, from ten drops to a tea spoonful, according to the age, every fifteen minutes, as an emetic, and every hour or two as an expectorant.

We may here not inappropriately introduce hydrocyanic acid and alum from their beneficial effects in cough.

Hydrocyanic acid, as a remedy for affections of the pulmonary organs, was at one time in great repute, although it has not kept up its reputation. It is a useful medicine in spasmodic cough, and probably owes its influence to its sedative powers. In the early stages of uncomplicated hooping cough it may be used with marked benefit, and its efficacy is promoted by combination with the carbonates of potassa or soda. Dr. Roe ascribes to this acid the power of curing simple hooping cough, that is, convulsive cough, unaccompanied by any inflammatory symptoms. He gives it in conjunction with ipecacuan and tartarized antimony. In two or three days after the use of these remedies the violence of the paroxysms, he says, is perceptibly diminished, and their duration shortened. To a girl ten years of age he gave a minim and a half of the acid every quarter of an hour for twelve hours. This practice is not so successful as Dr. Roe's reports

would lead us to expect; neither should we feel disposed to administer the medicine in such large doses.

Alum, the *sulphas aluminæ et potassæ*, has of late been in much repute in the treatment of whooping cough. In its exhibition it is necessary to distinguish between the first acutely inflammatory or catarrhal stage, and the second or convulsive one, which is characterized by spasmodic cough, with greater or less bronchial secretion, not necessarily accompanied by fever.

After the inflammatory stage has passed by, and the disease has existed for two or three weeks, when severe convulsive cough remains, uncomplicated with fever, pneumonia, or other inflammation or affection of the head, and the child is severely distressed by the viscid secretion from the bronchial membrane, every attempt to get rid of which produces the exhausting and characteristic cough, the alum may be most beneficially exhibited to infants, in doses of two grains three times a day; in older children, in doses of four, five, up to ten grains, three times a day, dissolved in water, with the addition of some syr. rhæados, zingiberis, or papaveris; or it may be given in conjunction with hyoscyamus, or conium. Within a day or two after its exhibition a remarkable effect is visible, the severity of the paroxysms being diminished, and the bronchial secretion becoming less viscid and more easy of expectoration. Alum has also the advantage of keeping the bowels regular, no aperient being required during its use.

BLISTERS.

Blisters and rubefacients.—The *primary* effect of blisters is stimulant, their secondary effect is depletory in consequence of the serous evacuation which they occasion. Counter-irritation is another very beneficial sanative principle which they call into operation. Blisters should not be applied in the early stages of active inflammations, neither is their application advisable until after a decided impression has been made both on the local inflammation and the accompanying febrile state. When this has been effected, blisters are highly useful, and

may, if promptly applied, obviate the necessity of a repetition of bleeding. Under these circumstances, the sooner and more effectually the object of blistering is accomplished the better; and for this purpose the emplastrum lyttæ is preferable to all substitutes, as we can command the extent of its action. Blisters, according to the editor's experience, possess very little, if any, power of subduing active inflammation; the proper time for their application is after the more pressing symptoms have been abated by blood-letting and other antiphlogistic means. The application of a blister in the first instance produces great irritation, frequently masks the symptoms, and occasions delay in the use of remedies, at a time when delay can never be safely admitted; for every possible means should be promptly adopted to mitigate actions, which in a very few hours may lead to a fatal result.—S. M.

In feeble children, or in cases of irritation, or where the existence of inflammation is doubtful, blisters may be usefully substituted for bleeding; or again, even when inflammation appears to have arisen from the suppression of some accustomed discharge, or chronic eruption, blisters are particularly indicated. The application of blisters in young children is sometimes followed by extensive inflammation beyond the vesicated surface; now and then the surface will ulcerate, and on some occasions sloughing, gangrene, and death will ensue.

The skin of children is highly vascular, irritable, and tender; but serious consequences rarely occur from blistering, unless there is some morbid condition of skin, as happens subsequently to measles or scarlatina. It is not advisable to apply blisters where there is much disposition to unhealthy ulceration; under all circumstances, the above consequences are best guarded against by never allowing a blister to remain on too long—from two to four hours is the utmost term; or as soon as the surface looks red and inflamed the blister should be removed, and if there be no vesication, a *warm* bread and water poultice should be applied. Indeed, under the above circumstances, if the part be dressed with white cerate only, vesication will generally be produced. Should extensive inflammation arise, cold water dressing may be applied, or a very dilute

solution of acetate of lead; or the surface may be dusted with arrow-root, or powdered starch, or failing these, with flour, and covered with dry, raw cotton. Should the surface become pale, a spirituous lotion will be preferable, in the proportion of $\mathfrak{z}\text{i}$. of rectified spirits to $\mathfrak{z}\text{i}$. of water, or one grain of *zinci sulphas* and $\mathfrak{m}\text{xv}$. *tinct. opii.* to $\mathfrak{z}\text{i}$. of water; or where there is a disposition to slough, a solution of nitrate silver, \mathfrak{Oss} . to $\mathfrak{z}\text{i}$. should be applied to the surface by means of a hair pencil, and the patient be supported by nutritious diet, ammonia and quinine.

In cases where it is deemed advisable to continue counter-irritation for any length of time, it is preferable to do so by the repeated application of blisters, than by keeping a blister open by the use of stimulating ointments.

Rubefacients.—Blisters applied for so short a period as merely to excite inflammation, sinapisms made with equal parts of flour of mustard, and finely crumbled bread, (or oat-meal,) formed into a paste with boiling vinegar, and applied for a moderate time, are extremely useful. They may be kept on from ten to twenty minutes; but the child will generally indicate by its uneasiness when they require removal. Judiciously employed, they are a good substitute for blisters, and are generally quicker in their action in those slighter cases arising from irritation, more particularly when caused by the retrocession of an exanthematous eruption. They act more efficiently when applied in contact with the skin. Attention should be paid to the inflamed surface, and it should be dusted with powder, as mentioned under the head of blisters.

The tartar-emetic ointment is a good rubefacient, and the solution of tartarized antimony, combined with *tr. lyttæ*, is a still more convenient and efficient application. The *lin. camphoræ comp.*, as also the *lin. ammoniæ*, and *lin. terebinthinæ*, are excellent slight rubefacients for ordinary purposes.

[Thoracic affections are very apt to assume a chronic form, or a disposition to return. In either of these cases the *long continued* application of a liniment of *opodeldoc* and ammonia, night and morning, is of the most extraordinary value and efficacy.—M. H.]

SEDATIVES AND NARCOTICS.

Medicines which diminish inordinate action, allay pain, and induce sleep. Most of this class of remedies have at first a stimulating effect, which is followed by a proportionate degree of depression of the vital powers, and generally by sleep. It supplies us with some of the most valuable means we possess for the treatment of the diseases of children, whose nervous susceptibility is so great, that a very considerable number of their maladies are the effect of mere irritation.

Admitting the great utility of sedatives and narcotics, much attention is required in their administration.

Opium.—The late John Hunter is reported to have said, "Thank God for giving us opium!" The use of this medicine seldom fails to procure sleep, which is almost as requisite for a child as food, and seldom fails to exert a beneficial effect during illness.

To diminish morbid sensibility, mitigate pain, induce sleep, allay inordinate action, and to check exhausting diarrhoea, opiates are sometimes indispensable, although much judgment is required for their proper administration. The effects of opium will be much influenced by the state of the constitution at the time it is given, and the dose in which it is administered.

If there be any local disturbance or disease upon which the irritability of the patient depend, as an inflamed gum, or loaded bowel, &c., we should endeavour to remove such cause by suitable means before we venture upon opiates. Their use is contra-indicated by plethora, an inflammatory state of the system, or preternatural determination of blood to the brain, or other vital organs. After blood-letting, opium appears to possess, in many cases, a great power of controlling inflammatory action, more particularly when seated in serous membranes. In cerebral irritation, or in meningitis, after depletion, the beneficial effects of an opiate in procuring tranquillity and sleep is very great; but in these cases much caution is required, as cerebral irritation is very liable to pass into congestion in the child, and inflammation to end in effusion; and

the narcotic effects of an opiate might tend to obscure or aggravate the symptoms, and increase the liability to congestion. In the sequelæ of cerebral irritation the value of opium is well exemplified in the following case:—

A child, ten months old, (still at the breast, and cutting the upper central incisors), had hooping cough, on which supervened convulsions of the most formidable kind, for which he was largely and repeatedly bled, and otherwise more actively treated. This state was followed by frequent convulsive twitchings, and distressing restlessness and moaning. He had a succession of wet-nurses, but bit their nipples so violently that none of them could endure it, and was only tranquil when sucking at the bottle, or under the influence of opium, until at last he took a quart of asses milk, and twenty-four minims of liquor opii sedat. in the twenty-four hours. It was upwards of six weeks from the time of the attack before he became sensible to either light or sound; you might make the loudest noise, or put a lighted candle close to his eyes, without producing the slightest effect. His bowels were kept open by rhubarb, magnesia, manna, or dec. aloes co.; the liq. op. sed. was changed for the liq. meconitis morphiæ, which confined his bowels less. At length he became by degrees sensible to light and sound; as the scale was ascended, so it was gradually descended, and from 24 m. of liq. opii. sed. he had 20, 16, 12, and so on, till all was left off, and he was also able to take cow's milk, which at first did not agree with him. At four years old he is now a hale, stout boy.

When the use of opium has been of some duration, it should not be suddenly withdrawn. When contractility of the pupil results from its employment, it is said to be indicative of the necessity of discontinuing it. In all varieties of gastric and intestinal irritation, and in severe cases of protracted diarrhœa, where a child is deprived of rest, warmth, and energy, and the intestines of their natural mucous secretions, generating morbid irritability of the bowels, which may terminate in ulceration, inanition, convulsion, and death, opium is a sovereign remedy, and is at least less likely to compromise the life of the child, than the irritating and ex-

hausting effects of the disease, and in these cases opiate enemata and plasters, are particularly serviceable.

The best form for giving opium is that of laudanum, or pulv. ipecac. comp., or pulv. cretæ comp. c. opio.

As laudanum acts on infants quickly, it should be given with caution, by mixing one or two minims in one ounce of fluid, or aromatic distilled water and syrup. Of this a tea-spoonful may be given every hour till rest is procured; the infant may soon fall asleep; after which, and as long as the narcotic effect lasts, the opiate should not be repeated too soon. By this means we arrive at a knowledge of a definite dose for that child, and avoid the effect of an over dose. Dr. Hugh Ley says, "I have known a child sleep for above thirty hours in consequence of the external application of opium, and during the whole of that time it was only once imperfectly awakened to take, in a drowsy, half torpid condition, a little milk from the mother's breast. It at length recovered from the torpor, was free from the cough, for which the opium had been rubbed on the skin, (none having been given internally,) and then took and digested its food as before."

Where it is desirable to obviate costiveness, the aforementioned mixture may be sweetened with manna. Where there is a tendency to diarrhœa, the pulv. cretæ comp. c. opio may be given in one or two grain doses to children under a year old: in this form the opiate is said to act more energetically. Opiates may be externally applied with great advantage, in the form of liniment or plaster.

Infants, as well as adults, vary much in their capability of bearing opiates. In some a very small dose is followed by very alarming symptoms; and death has not uncommonly ensued from the incautious exhibition of some preparations of opium. The children mentioned in the note on Godfrey's cordial had, probably, not taken so much as four drops each of laudanum, yet both became convulsed and died. I once saw a child in the month thrown into a state of excessive stupor by taking one dose only of a mixture, in which were four drops of laudanum; the actual quantity swallowed could scarcely amount to a single drop. In the exhibition of many medi-

cines, we find that children bear a larger proportionate dose than adults; as in the case with scammony, calomel, jalap, &c.; but with opium, and other narcotics, they generally can only bear a smaller proportionate dose; it is best, therefore, not to give, in the usual diseases of children, a full dose of laudanum. S. M.]

I would once more quote the "Letters to a Mother," for a description of the poisoning by opium:—"The morbid effects of opiates, or anodynes, are seen as the consequence of a single dose, or of the habit of giving these medicines. Infants are very susceptible of the effects of the first dose of an opiate. Dozing, and then, perhaps, convulsion, takes place; the infant lies with the eyes partially closed, and turned upwards; the breathing is laborious and sighing; there is some tossing about of the arms, perhaps, and the powers of life begin to sink.

"The appearances which arise from the habit of giving opiates are very peculiar. They may be seen in the dwindled, pallid, sallow, stupefied countenances of the infants of the poor as you pass them in the street. The eye-lids are red and swollen; the whole face is the miniature of a sickly, aged person. Not dissimilar appearances take place from giving spirits."

Dr. Christison observes:—"It appears that very young children are often peculiarly sensible to the poisonous action of opium, so that it is scarcely possible to use the most insignificant doses with safety. Sundeling states in general terms that extremely small doses are very dangerous to infants, on account of the rapidity of absorption. This opinion, which I have heard stated by various practitioners, is amply supported by several cases." In one, "the administration of three drops of laudanum in a chalk mixture for diarrhœa to a stout child fourteen months old, was followed by coma, convulsions, and death, in about six hours." In another, "an infant, a few months old, died with all the symptoms of poisoning with opium after receiving four drops of opium."—M. H.

Conium is a powerful sedative, and has been deservedly commended for allaying morbid irritability; it is less apt to affect the nerves, or to disorder the digestion than opium; it is of

great utility in allaying pulmonary irritation, and is particularly serviceable in hooping cough. It is also much recommended in strumous affections. The extract, or powder, may be given in conjunction with vin. antimonii pot. tart., or vin. ipecacuanæ, and also with the alkaline salts.

Hyoscyamus is a very useful narcotic, and is not so liable to affect the head, or to produce that disturbance in the biliary secretions which so invariably follows the use of opium. The tincture may be given with advantage during inflammatory diseases, and in gastric fevers tends much to tranquillize the restlessness which generally prevails in a great degree.

Extractum papaveris is merely less apt to produce cerebral congestion than opium. It may be given in the form of syrup, where its preparation can be relied on, one ounce of which ought to be equal to the solution of one grain of opium. Half an ounce of the extract dissolved in hot water forms a good solution for making a poultice with crumb of bread; and dissolved in double the quantity of water, or decoction of chamomile flowers, makes a useful anodyne fomentation.

Ext. lactucæ, or *lactucarium*, tranquillises, without causing apparent excitement, or much sleep.

Ext. belladonnæ is a most valuable medicine in the neuralgic affections of adults; but its administration requires so much circumspection, as to render it, except upon some extraordinary occasions, inadmissible for children. It is said to be useful in hooping cough, and as a prophylactic in scarlatina, though the evidence of its powers in the latter capacity requires corroboration.

Morphia—The salts of morphia in elder children are very useful anodynes. They do not act upon the skin, or cause head-ache, dryness of the tongue, or constipation, so much as opium. One grain of the acetate, or hydrochlorate, may be dissolved in two ounces of water, and a drachm of the solution given at bedtime, and repeated, if required. Half a grain of either of these salts powdered, and sprinkled on a blistered surface, is of great service where it is inexpedient to administer the medicine by the mouth.

CARMINATIVES.

Medicines which allay pain in the bowels and dispel flatulence. Infants are very prone to suffer from flatulence, often accompanied by acid eructations, griping, and sometimes convulsions. For the relief of these symptoms, aqua anethi, carui, fœniculi, or anisi, tinct. foetida, sp. ammoniæ, arom., musk, and occasionally tinct. opii, are exhibited; and as flatulence, &c. most commonly arise from improper or artificial feeding, some aperient is usefully combined with them, as in this form:

R.—Pulv. rhæi, magnesiæ, aᅇj.
Ol. anisi, gtt. ij.
Sacchari, pur. ʒj.
Aq. destil. ad ʒij.
Tinct. rhæi, ʒj.
Sp. ammon. arom. ʒxij. M. ft. mist.

A tea-spoonful occasionally. Where there is a tendency to diarrhœa, ʒij. tinct. opii may be added, and this may be beneficially given in flatulent colic unattended with inflammation.

In cases of spasms dependent on abdominal irritation, an enema of gruel, with tinct. assafœtidæ, is of great utility, as also friction on the abdomen, with linimentum ammoniæ fortius, combined with tinct. opii., or lin. saponis, combined with the opiate, where the abdomen is much distended. In these cases nurses have too often recourse to patent medicines; among which, Dalby's carminative and Godfrey's cordial are in great repute. These are manufactured with different proportions of opium by various chemists, and, consequently, are always uncertain, and not unfrequently dangerous, medicines.

Dalby's carminative and Godfrey's cordial are medicines very often kept in the nursery, and the opium they contain makes them remedies of great convenience to the nurse. They are unquestionably preparations of great power and efficacy, and, consequently, very unfit for indiscriminate use. No

remedies for infants require greater care and judgment in their application; none are so carelessly and incautiously given.

The late Dr. Clarke, in his "Commentaries," has mentioned a case which he saw, where "forty drops of Dalby's carminative destroyed an infant." Similar instances are not uncommon. A woman living near Fitzroy-square, thinking her child not quite well, gave it a dose of Godfrey's cordial, which she purchased at a chemist's in the neighbourhood: in a very short time after taking it, the child fell into convulsions, and soon died. In less than a month the child of another woman in the same house was found to be ill with disordered bowels. The first woman, not at all suspecting that the Godfrey's cordial had produced the convulsions in her infant, persuaded her friend to give the same medicine to her child. A dose from the same bottle was given, and this child was likewise attacked almost immediately with convulsions, and died.

Mr. Adams, of Charlotte-street, who was called to the last child, related to me these particulars.—S. M.

STIMULANTS.

Medicines which possess the property of rousing the energy of the system, and supporting the languid and drooping powers of life.

Ammonia is one of the most valuable diffusible stimulants we possess as applicable to children; it is quick and transient in its action, and does not affect the head as spirituous preparations do. Its use is indicated in eruptive fevers, where the eruption recedes, or comes out tardily; and in scarlatina maligna, and some varieties of erysipelas, it is not exceeded by any one other medicine. In dyspnœa, depending on debility or spasm, and in the advanced stages of pulmonary catarrh, where much mucus is accumulated in the bronchia, it is highly useful.

In the latter stages of fevers, or eruptive diseases, when tremors and subsultus tendinum are present, or when extreme restlessness, spasm, or convulsion, arise from exhaustion, or in consequence of over depletion, or long protracted disease, it

may be most beneficially combined with *tinctura opii*. If convulsions arise from opposite causes, or undue excitement, in plethoric habits, great mischief might result from the mal-administration of stimulants. Great caution, then, is required in their exhibition, that the very effect is not produced which the object was to counteract, as the diseases of children at first rarely arise from debility.

Turpentine, as a stimulant and anti-spasmodic, is well adapted for children, one or two drops often quickly relieving flatulency and spasm. Although irritant to the skin, it does not affect the sensibility of the mucous membranes; on the contrary, in cases of protracted diarrhœa, it is extremely beneficial, and also in intestinal irritation dependent on worms. It may be taken in milk, or beaten up with the yolk of an egg, or rubbed down with mucilage of acacia and honey.

TONICS.

The restorative powers of children in a state of infancy and in their earlier years are so vigorous, that after the removal of any cause of disease, they scarcely require the aid of tonic medicine; for as soon as they are able to take appropriate food, and can get into the open air by being carried out, or otherwise, they are speedily restored to health; but in elder children, during their convalescence after protracted disease, tonic medicines are essentially serviceable. In the exhibition of tonics, it is of importance to apportion the strength of the tonic to the strength of the patient's stomach: the bitter vegetable infusions are generally well borne.

The infusions should be made of less proportionate strength than the formulæ of the pharmacopœia, which is preferable to diluting them with water. It is also of importance that they should be made fresh; some alkali and aromatic tincture forms a useful addition.

Cinchona is a powerful tonic and antiseptic, and is very appropriate in all cases of debility where an active tonic is required, particularly if the disease assume a periodic form, and is unaccompanied by any inflammatory condition of the system,

or of the digestive organs, which contra-indicate the use of bark. The decoction is the best general form; it may be rubbed down with confectio-amygdalæ, which renders it more palatable; the ext. of liquorice also disguises its taste very well. If we require to increase its strength, a portion of the ext. cinchonæ may be added, or perhaps a few minims of the liquor cinchonæ.

Quinæ disulphas, properly diluted, is a very useful and elegant tonic; and, with the addition of some tincture and syrup of orange-peel, and a little dilute sulphuric acid, it forms an agreeable bitter.

Iron is of all the best general tonic for children; it is gradual in its effect, but more permanent in the influence which it exercises on the system than any other. From its various preparations, and the variety of combinations which they admit of, it may be given at all ages and in every form of disease, which is the result of deficient power; but it is in strumous cases that its salutary effects are more especially conspicuous. The use of iron is indicated in many cases of general debility, and in anæmia, where the blood is deficient in red particles, and where, consequently, the vital powers and temperature are reduced below the healthy standard. Its use is contra-indicated during the existence of active inflammation, and in subjects of an inflammatory or plethoric habit, or those who are disposed to congestion of the head or lungs, or while the bowels are in a loaded state.

The *vinum ferri* is an excellent preparation, and may be given to the youngest infants, in doses proportioned to their ages. In cases of scrofula, it requires to be persevered in for a considerable length of time with occasional interruptions, or alternately with, or in combination with, iodine.

Ferri potassio tartras is well adapted for children on account of its comparative tastelessness; it is less constipating, and less exciting to the vascular system, though at the same time highly efficient. It may be given in the form of powder, in doses from gr. v. to xv., joined with some aromatic.

Tinctura ferri sesquichloridi is a very useful compound, and conjoins the deobstruent property with the tonic. It may be

given during a state of vascular excitement where other forms would not be admissible, and is beneficially administered in cases of glandular enlargement and tumid abdomen, and where there is loss of tone of the mucous membrane or chronic diarrhœa.

Ferri sesquioxylum is a mild and efficacious preparation, resembling iron filings in its effects, although not so powerful as an anthelmintic. It has the advantage of causing less flatus or foetid eructations; it is usefully combined with a small portion of the bicarbonate of potassa, and it may be made up with gingerbread cakes, and efficient doses conveniently given in that way.

Iodine is a most useful, stimulating tonic in cachectic states of the system, such as we often see in children who have been neglected or mismanaged. It exerts a special action on the absorbent and lymphatic system, and also on those vessels whose function it is to deposit or reproduce. Like many other remedies, its action varies according to the doses in which it is administered; in minute doses it produces a decided tonic effect. By promoting the action of the excretory vessels, it most probably increases that of the assimilating ones. Thus, by stimulating the functions of the liver and kidneys, and increasing the insensible perspiration, it diminishes abdominal plethora. Like all powerful medicines, it requires care in the selection of the cases to which it is applicable, and in the mode of its exhibition.

In irritable states of the digestive organs, or during an inflammatory condition of the intestinal mucous membrane, or in a highly sensitive state of the nervous system, it is scarcely admissible; and where there is much emaciation, it should be most cautiously given. It exerts a more beneficial influence when preceded by mercurial purgatives, which, by promoting the biliary secretion and unloading the bowels, prepare the system for the more general and gradual operation of the iodine. The best mode of giving it as a tonic is in the form of the compound solution, in combination with bark or iron: in this way it affords advantages superior, perhaps, to those arising from any similar medicine. *Liquor potassii iodidi*

comp. and the tinc. ferri hydrochloridi in some aromatic water, with syrup, is a very useful form; or the syrupus ferri iodidi as now generally prepared. Where there are any glandular, enlargements, or a tumid state of the abdomen, the simultaneous local application of iodine is advisable; as \mathfrak{z} i. of the tinct. iodinii comp. to \mathfrak{z} vij. of lin. saponis; or the unguent. iodinii comp. These should be applied by moderate friction, night and morning, or the surface of the tumor or abdomen may be gently brushed over with the tincture every day, or every other day, according to the effect produced. Where it is admissible, the previous abstraction of a moderate quantity of blood by leeches will greatly facilitate the action of the iodine.

SECTION V.

ON THE DISEASES OF CHILDREN.

THE following account of the diseases of children, which in its later editions has made its appearance in a somewhat new form, and less exceptionable to profession men, it is hoped may place this branch of medicine upon a respectable footing, and exhibit a practice as well founded and rational as in any other. That no such serious attempt had been previously made, is sufficiently acknowledged; although detached parts, and some of the more important diseases of childhood, have been ably considered at different periods.

For the manner in which the work is now executed, the author can only say, that in addition to a long experience, he has carefully consulted the most respectable authorities, as well ancient as modern; while, by a close attention to facts, he

has endeavoured to obviate the effects of that peculiar veil,* which is said to obscure infantile disorders. A practical arrangement of them has been studied, comprehending likewise the natural consecution of parts, and the order of time in which the complaints severally appear, that some conformity may be everywhere observed. Regard has also been had to their respective causes and symptoms, tending to elucidate their nature, and render their treatment more obvious than has been generally imagined.

To their immediate diseases, is added an account of some of the principal accidents and injuries to which the earlier periods of childhood are peculiarly liable; and though such articles may, indeed, be very unimportant to some readers, it is presumed they will have their use; and may, possibly, prove no small satisfaction to others. And here it may not be improper to observe, that whatever merit the publications of others may possess, they either form a part of some large systematic work, or else they are far too concise, and have omitted complaints of too much importance to be overlooked, as well as been necessarily silent on many, with which the authors themselves were unacquainted.

The judicious treatment of infantile disorders demands, indeed, equal attention and experience; close and repeated observation being the great means of supplying the want of that kind of assistance which the personal information of adult patients frequently affords. The disorders of childhood, however, are nowise mysterious, nor would ever have been thought so, if they had always been submitted to proper hands, and been as carefully investigated as the diseases of adults. Nor is it otherwise with the diseases of the earliest infancy, of which it may be safely asserted, that as they are more obvious than they are generally supposed, so is their number compara-

* There is nothing to which this peculiar obscurity may be referred, but the incapacity of infants to describe their own feelings. There are, nevertheless, other sources of information, less fallacious, sometimes, than the more literal description of adults, which, in nervous complaints particularly, would tend to perplex the ablest physician, if he should always be led by them; and the like necessary discrimination will serve him equally well in the treatment of infants.

tively small, their cause uniform, and the treatment of most of them simple and certain.* This is especially true of the disorders of this period, though it may, perhaps, be objected, that their various diseases cannot all originate from one and the same cause; nor is it my intention to assert it, though it may be safely advanced in regard to a great number of them. It is to be remarked, likewise, that it is precisely the complaints of *early infancy* that are here spoken of; though it is, nevertheless, very evident, that there is a greater *uniformity* also in the *causes* of the several disorders, even of older children, than there is in those of adults, which have very often various, and dissimilar remote causes, at different times, and in different habits; *e.g. obstructed catamenia, ascites, &c.*

For the proof of these assertions, as well as in order to establish a rational practice, I shall first consider distinctly the causes and diagnostics of their complaints, before I attempt to enter upon their cure.

And here I shall not attend to their various remote causes, but I shall confine myself to a practical consideration of the subject, and point out their obvious occasions and symptoms. And, on this account, I shall not take notice of all the changes which Nature herself induces during the growth of infants, as they pass from one stage of life to another; which are, doubtless, remote causes of some of their complaints. A more minute attention, indeed, would lead only to diffuse and uncertain theories, which have been established in one age only to be rejected in the next. In this country, at least, such vague theories are now deservedly laid aside; though an era, perhaps, better calculated for their investigation, than those wherein such subjects were agitated with a zeal proportionate to the writers' comparative ignorance of anatomy, and those principles of the animal economy, which can be established only by a close observance of facts.

A principal cause, mentioned both by ancient and modern writers, is the great moisture and laxity of infants; which is

* *Facillimè, inquam, in morbos dilabuntur infantes, et nisi aut serius aut imperitiùs tractentur, facillimè in sanitatem restituuntur.*—*Harris, de Morbis Acutis Infantum.*

necessary, however, in order to the extension of parts, and the rapid growth of young children. This laxity arises from the vast glandular secretion, their glands, in general, being much larger in proportion than those of adults. I might instance in the thymus gland, and particularly in the pancreas and liver. But, besides these, there are innumerable glands situate within the mouth, œsophagus, stomach, and bowels, which are continually pouring out their contents into the first passages. This is, doubtless, a wise provision of nature; and I cannot, therefore, think with Dr. Armstrong, that the gastric juice renders the chyle less fit for absorption; for without a due proportion of it, no good chyle can be made; but as even the best things may sometimes be in excess, and as we do not strictly follow the dictates of nature in the management of children, as to their food, manner of clothing, sleeping, &c., this abundance of slimy matter may often overload the stomach and bowels, the constant seat of the first complaints of the infant state.* A second cause arises from the great irritability of the nervous system, and the delicacy of the muscular fibres, whereby the serous juices do not readily enough return, but remain longer than is consistent with a free circulation through the extreme parts. The quality of the milk, or other food, with which infants are nourished, may be accounted a third. In addition to these general causes, may be reckoned the want of exercise,† which at a more advanced age, happily for us, we are obliged to make use of, and which art, in general, does not duly supply in regard to infants.‡

* Non quod ætas per se sit causa ullius morbi, est enim res naturalis et temporis determinatio, sed quia disponit ad morbos quosdam facilius suscipiendos si causæ eorum accesserint.—*Primeros: de Morb. Infant.*

† Exercise is the grand mean of health. The irrational species are capable of affording it to themselves almost as soon as born; and though infant children are not, they are passive, and can be *exercised*. Nature and instinct point out the expediency of it, and the fond mother, who follows only her own inclination, naturally and insensibly adopts it. On this head see the article of Motion and Rest.

‡ Together with these sources might be noticed another, not mentioned by writers, though not, indeed, an efficient cause of infantile complaints, but an occasion arising from that constitution the Creator appears to have established, as a law of nature running through the animal race; I mean, the rank which the several species hold in that scale. For, whatever their apparent comparative strength may be, the

Hence arise acidities in the first passages, a constant attendant upon all their early complaints.* Among the first of which may be reckoned the retention of the meconium, and the last (which may be termed a disease peculiar to infants) is the cutting of the teeth, in which likewise the state of the bowels is very much concerned.

Upon each of the above heads, it will be necessary to make further observations as occasion may offer, in order to take notice of certain accidental causes arising from mismanagement, or errors in the *non-naturals*; especially in regard to the quantity of nourishment administered to infants, and inattention to the state of their bowels.

The symptoms of these first diseases of infants, (by which we also judge of their nature,) are chiefly retention and excretion; sour belchings; sickness; vomitings; purgings; the nature of the matter thrown off; watching; inquietude; contraction and sharpness of the features; blueness about the mouth; turning up of the eyes; thirst; heat; the manner of breathing and of crying; retraction of the lower extremities; and pustules, or eruptions, external or internal. The pulse and urine are less certain marks in the greater number of their complaints, than they are in older children, and adults. To this may be added, the openness, or firmness of the fontanelles, and of the sutures; the size and figure of the head, and the strength of the bones; and the relaxation or contraction of the skin in general, and of the scrotum in particular.

Having thus briefly adverted to the general causes and symptoms, I proceed to the consideration of the disorders themselves, beginning with one hitherto unnoticed by writers; which, though very rare, seems to be the first that can take place after the birth, and is a kind of

more noble and useful amongst them, whether domesticated or wild, (though, indeed, we cannot say precisely what the latter would be in a perfect state of nature) seem to be liable to far the greater number of evils. It is possible, indeed, some philosophers may be disposed to draw very unbecoming inferences from such a position; but there are others who conceive it to be very justifiable, and analogous to various established facts in the dispensations of Providence towards lapsed creatures.

* Sylvius de le Boe, Harris.

SYNCOPE, OR FAINTING.

Many new-born infants, it is well known, lie, for some time, in a very feeble and uncertain state, with no other sign of animation than a weak pulsation of the heart, and the arteries of the umbilical cord. But I have only in one instance seen any thing at all resembling the true syncope, after the living powers have once prevailed. In this case, the child was born at the instant its mother was moving from her chair into her bed, and in consequence, unfortunately, fell with violence on the floor. It, however, very soon cried, and did not appear to be materially injured; but, a day or two afterwards, fell into a strange, languid state, very different from any thing I had been accustomed to see. Stools being procured, it revived, and frequently took plenty of nourishment; but at intervals sunk into its former languor, breathed very faintly, and died about the sixth day.

But, with the following case, which comes precisely under the idea of *syncope*, I have been favoured by the ingenious Mr. Hey, senior surgeon to the infirmary at Leeds.

He reports, that an infant, born at the full time, lay moaning and languid for four or five hours, and was then seized with a fainting fit, in which it continued for half an hour. In this state Mr. Hey found it. It had ceased to breathe, except now and then giving a gasp, or sob; and was as pale as a corpse. There was, however, a sensible pulsation of the heart, though feeble and slow; but whether the circulation had been kept up all the time previous to his visit, could not be ascertained.

As soon as Mr. Hey had time to consider the case, he directed the infant's nostrils and temples to be stimulated with the *volatile alkali*, and when it became capable of swallowing, a few drops of the *tinctura valerian. volat.* were administered in a tea-spoonful of water, and repeated at proper intervals; it likewise took a tea-spoonful of the *ol. ricini*.

The child had three other similar attacks in the course of the day, though it had slept composedly between whiles, and

sucked at the breast. It had seven more fainting fits in the night, two of which were severe ones; but Mr. Hey was not called again till the next morning. He then observes, that reflecting on the case, and comparing it with that of a man whom he had seen thrown into convulsions by a large bleeding, after having hanged himself, which were cured by the above tincture given in wine, he pursued the like plan with the child, and administered the drops in a tea-spoonful of a generous white wine, every two hours. The infant was very sensibly refreshed by the first dose, and had no return of the disorder, except in the slightest degree, and became a very healthy child.

The *tinct. valerian. volat.* administered in this manner, is also an excellent remedy in other instances of debility and languor, when the *primæ viæ* have been previously cleansed.

A kind of syncope not dissimilar to this, but taking place a few days after birth, has been removed by a very different stimulant, which would not have been had recourse to, if various other means had not failed. Infants in this syncope appear to be dying for several days, and have even been concluded actually dead: but reviving again, relapse as before. In this state, the fume of lighted tobacco has been forced into the mouth with the happiest effect, though at the expense of a considerable struggle, succeeded by a strong convulsion. Upon the spasm subsiding, however, the infant soon falls asleep, and awakes apparently well; and continues so for several hours; but the syncope returning, the fume should be repeated.

If the struggle should return, it will prove slighter than the former: and neither that, nor the convulsion, will probably be renewed after a second recovery.

DISCOLORATION OF NEW-BORN INFANTS.

An affection of new-born infants, not much more common than the former, is a discoloration of the face and extremities, and sometimes of the whole body; and, like the former, seeming independent of the circumstances attendant upon the birth. A mere discoloration of the face after laborious

deliveries, is very common, and gradually disappears, without affording any occasion of alarm. But in the present instance, the parts are very black, and afterwards turn of a leaden-blue colour; sometimes appearing at the instant of the birth, and at others not for an hour or two afterwards, or sometimes a day or two. In one instance, I remarked the discoloration of the face to be partial, appearing in spots; the greater number being of the size of small peas, but some larger. In some instances, the discoloration abates a little, and in others not: sometimes it goes entirely off, and returns again, and in that case is of more serious consequence, and commonly dangerous. From an examination of the parts after death, I have learned, that this recurring blackness depends upon some internal mal-formation or derangement,* and for which nothing that I know of can be attempted, but the general remedies for fits; which indeed usually follow, when none of the subsequent means prove effectual.

From the result of this recurring blackness, it seems always to be owing to some fixed cause, excited into action by certain circumstances, particularly any sudden agitation of body or mind. In such cases, the disappearance of the discoloration is followed by a return of the tinge of as deep a colour as at first. But in the innoxious kind, which is the more immediate subject of this chapter, though the blackness, in some instances, after abating a little, again returns, it never acquires the deep colour it had at first, and when it has once completely disappeared, it never returns.

This discoloration, therefore, probably depends merely on some spasm affecting the external veins, and interrupting the free return of the blood into the larger vessels. Where this is the sole cause, the discoloration, howsoever great, is probably harmless, and would in every case soon abate, and in time entirely disappear; but is removed sooner by proper remedies. The only necessary means seem to be, to procure stools (which

* In one instance, the subject of which died about the tenth day after birth, the malformation was in the stomach; the pylorus being preternaturally straight with difficulty permitting the food (which was only breast milk) to pass into the bowels.

should be immediately solicited by clysters;) to excite vomiting, if the infant appears to be sick at the stomach; and to rub, or gently chafe the body and limbs before the fire. But nothing tends to remove the blackness so suddenly or sensibly, as applying a leech or two upon, or near the livid parts; and this should theretofore always be had recourse to, if the blackness does not very evidently abate in an hour or two after birth, by the help of one or more of the means that have been recommended.

The discolorations which are observable soon after the birth of children, if not occasioned by mechanical pressure, or injury during the labour, frequently depend upon deficient formation of the heart or arterial system, and are consequently little under the influence of medical treatment. When the discoloration is observed before the pulsation has ceased in the umbilical vessels, it may be useful to divide the funis, so that the blood passing through the umbilical arteries may be received into a cup to the amount of one or two ounces. This, and immersing the child in warm water, offer the most probable means of relief, whether the discoloration arises from a permanent or temporary cause. For the discoloration which comes on some hours after birth, nothing seems more likely to be useful than the plan recommended by Dr. Underwood.—S. M.

RETENTION OF THE MECONIUM.

The ordinary source of infantile complaints resides in some derangement in the first passages, according to most ancient and modern writers;* and I am satisfied that a foundation is sometimes laid for them, in the want of due attention to an early expulsion of the meconium, which will sometimes firmly adhere to the coats of the bowels, and remain for many days, unaffected even by powerful medicines; sometimes occasioning dangerous complaints from the birth, and at others, giving rise to more remote evils; and therefore, on both accounts, calling for the early attention of practitioners. I shall only observe in this place, that though the meconium should

* Hippocrates, Celsus, Paulus Aegineta, Harris, Armstrong.

not be all retained, yet a part will often remain much longer than has been usually imagined, and will come away, perhaps unnoticed, at a late period, when no retention of it has been suspected. Of this I can have no doubt, having been called to visit infants after the month has been expired, who have been unwell through all that period, and from whom meconium has still been coming away. A tea-spoonful of *ol. ricini*, given once or more, has soon carried off a great quantity; upon which all their complaints have disappeared.

More active purgatives, however, are sometimes without effect; probably from a morbid suspension of nervous influence, as in the following case:—

A child was born of very healthy parents, (not at all of constipated habits,) after a quick, and comparatively easy labour, and appeared to be itself in good health.—To avoid prolixity, I shall briefly observe that the child took a little rhubarb an hour or two after it was born, but having had no stool when I saw it the next day, I ordered a clyster to be thrown up. In the evening the child became drowsy and insensible, and when roused, it moaned, but seemed unable to cry. It continued pretty much in this state (except that at times it appeared to be in great pain, and was evidently convulsed) for six days; and was nourished chiefly by breast milk, given by tea-spoonfuls, seldom reviving sufficiently to suck. It had no stools, but such as made only a few spots on the cloths about the size of a shilling, till the sixth day, and then they were very small, hard, and lumpy. The next day it had more of this kind, and had not, till the eighth day, any thing like a proper stool, which was also mixed with hard lumps; but on the eleventh day they were thinner, and on the thirteenth came very freely. In the course of six-and-thirty hours, I prescribed two ounces of the common infusion of senna, two drachms of Rochelle salts, four grains of jalap, and a grain of calomel; besides purging clysters, and the use of the warm bath. The next day the child took four grains of ipecacuanha at two doses, and forty drops of *vinum antimonii*, at four times, (in the course of an hour,) without any effect; and at another period, six drachms of castor oil, besides several doses of

man. Three days after the child had gotten rid of the meconium, the thrush made its appearance, which was slight, but continued above three weeks.

From such instances, the expediency of having recourse to some safe and effectual means of purging off the meconium, seems to be evidently pointed out; more especially when we consider the dangerous complaints which are said to arise in some of the hospitals in *Paris*, from an undue retention of this viscid matter, as will be further noticed in another place.*

ON THE INTERTRIGO, OR CHAFINGS.

To obviate these troublesome affections, washing with cold water is certainly useful; but they can never call for such severity of treatment, as for an infant to be plunged with its feet or nates into a pan full of cold water, and be afterwards dashed all over with it, to its daily discomfort and terror. Cleanliness and bracing the skin are the proper intentions; and, with this view, besides the nates and groins, the arm-pits, folds of the neck, and parts behind the ears, may be occasionally washed with cold water; and if the discharge be not checked by it, they should be dusted with a little hair powder, the powder of lapis calaminaris, or of ceruse; or a little white

* Writers upon the diseases of infants, differ widely in opinion upon the subject of using means to procure a due evacuation of the meconium; some judge it to be always expedient, if not absolutely necessary, to use artificial means for this purpose; others think that the expulsion may always be left to the ordinary powers of nature:—"of nature," as one of the most urgent recommenders of this method terms her, "*all wise, all provident, and all perfect.*"

The truth, as is usual, lies between the two extremes. A free and spontaneous evacuation of the meconium very often takes place as soon as the child is born, and, of course, it is unnecessary in such a case to give purgatives for that purpose; but not unfrequently, there is a torpid state of the bowels, and in consequence, the meconium is either not at all or very scantily evacuated. Are we in a case of this kind to be deterred from the use of aperients, by the cry of "Nature is all-sufficient?"

Upon the whole, it may be concluded, that though an aperient soon after the birth of an infant, may be often properly omitted, yet on many occasions it is right to have recourse to such an assistant: especially when the child is fed with spoon victuals, or is suckled by a nurse, whose milk is several weeks or months old.—S. M.

vitriol may be added to the water; which, if the excoriations are not very considerable, will generally heal them very soon; should these fail, they may be dressed with the red drying ointment of Bates's dispensatory. But these drying remedies should rarely be applied to the ears. In a very acid state of the stomach, during the month, particularly where there is a purging with very green stools, the parts covered by the cloths are often infested with a still more troublesome excoriation, called intertrigo; and, while that state continues, will not be healed by any drying applications. I have found nothing so pleasant and useful in this case, as covering the parts with the thin skin found upon the veal kidney, which softens and cools them, till the cause of the complaint may be removed by the use of proper absorbents. There is a mixed affection of this kind, however, in which these parts are not actually excoriated, but are very hard and swollen, as well as painful and inflamed; and the affection seems to be kept up by the acrid nature of the excretions, though not originally caused by it. In this case, instead of daubing the parts with wetted fuller's earth, gruel or greasy mixtures, an embrocation of elder-flower water, with as much boiling milk as will render it moderately warm, has been immediately efficacious. By the use of these means, the worst cases I have met with have been successfully treated; nor have I ever seen any thing like mortification, or need of administering bark, as recommended by Dr. Armstrong. But one grand means of keeping children from chafing, is to preserve them very dry and clean. A vulgar error may here be noticed, which is still too common, that of wearing a pilch, as it is called. This, as it is sometimes used, contributes not a little to make children weak; it was originally designed to be worn only for the few first weeks after birth, but is often continued for as many months. It can answer no possible end but that of saving a little trouble, since, instead of keeping children dry and clean, it has the directly contrary effect; for if it have received any wet through the usual cloth laid under it, it ought itself to be changed as often as the other, or must certainly be damp and uncleanly; while by heating the loins and

lower limbs, it has a manifest tendency to relax, and dispose infants to become rickety. It may be proper to drop a word more, with a view to counteract a vulgar notion, familiar only to common people, that a frequent change of linen has a tendency to weaken new-born children; an absurd idea, that has not the smallest foundation in reason or fact. It is, indeed, impossible that a child should thrive or be healthy if the strictest attention be not paid to cleanliness, which is one of the principal articles in which the children of poor people are at a great disadvantage, and which becomes a constant source of rickets and distortions among them. Indeed, infants, if healthy, may oftentimes be so managed as to be much more cleanly than even people of great delicacy have been wont to imagine; so as even to supersede altogether the use of cloths, either by night or day.

TUMID BREASTS OF INFANTS.

In many children, a day or two after they are born, the breasts become exceedingly tumid, hard, and painful, containing a fluid resembling milk. Ignorant nurses, and the ignorant ones only, imagine that this milk, as they call it, ought to be pressed out; and it is quite grievous to see how rudely some nurses rub and squeeze the breasts for this purpose, although the redness of the part shows that it is already in a state of inflammation, and the screams of the babe demonstrate the severity of its sufferings under so rough an operation. In the case of inflammation, a bread and milk poultice is the preferable application; but if the part be not inflamed, it can want nothing at all; or should it be conceived, that something ought to be done, a little oil, with a few drops of brandy, may be gently rubbed upon the part; or small pieces of the litharge-plaster may be applied, and lie on the parts till they fall off themselves. I have, indeed, had sufficient evidence of such considerable tumefaction and hardness, as to satisfy me, that when no violence is offered to the parts, the application of a bread and milk poultice will always prevent either suppuration or other unpleasant consequence. I have met with instances,

in which the tumour has been much larger and harder than I could have suspected on such an occasion; and yet, after continuing for more than a week, without any sensible diminution or amendment, has soon afterwards subsided entirely.

ICTERITIA, OR INFANTILE JAUNDICE.

The jaundice of infants seems always to have been improperly conceived of. Those who have written only on children's diseases, have usually passed it over in silence, whilst others have considered it always as rather a serious complaint, and have prescribed as for the jaundice of adults. On the other hand, nurses have usually accounted the yellowness that appears about the third day after birth, if unusually deep, (termed by some the yellow-gum,) as the true jaundice. Certainly neither of these opinions is just; for the latter of these appearances requires no attention at all, and though infants are not very often troubled with the true jaundice like adults, they nevertheless are liable to slighter affections of that kind, which claim some attention. These are easily distinguished from the common yellowness, by the tunica albuginea being always very yellow; but the nails are not tinged, as in the jaundice of adults,* though it is probable they usually would be, if the complaint were long neglected, and the child suffered to be costive. I have waited some days to see if the yellowness would go off of itself, as the usual tinge does; but it has always increased rather than diminished. It arises from viscid matter obstructing the gall ducts, and therefore requires a little emetic. The tartarized wine of antimony is a very proper one on this occasion, as it may likewise procure two or three stools; but as children in this complaint are not easily made to vomit, should the wine fail, three or four grains of the powder of ipecacuana may be given, as more certain in its operation; and the next day, four or five grains of rhubarb. Should the symptoms continue, the emetic ought to be repeated after two or three days, and rhubarb be given about every other day, till the yellowness

* See note * in next page.

disappears; which, under this treatment, never continues more than ten or twelve days, unless the infant be very costive, or the stools are of a very pale colour, which is but rarely the case. Or the daily exhibition of a few grains of *hydrarg. c. cretâ*, with one of jalap, or two or three of rhubarb, will commonly remove the complaint. Where an emetic has been objected to, and the whole attention confined to keeping the belly open, the yellowness has continued when I have taken my leave at the end of the month, attended with languor, and other symptoms of debility. When the belly is unusually costive, and the stools very pale, infants are generally found to have a true jaundice, and require some saponaceous medicines, such as the liquor potassæ subcarbon., together with daily frictions of the stomach and belly, and the use of the warm bath.

Women long afflicted with jaundice, during any part of their pregnancy, and even actually brought to bed in that state, do not infect their children,* unless they also suckle them; but from striking instances, I have found, that suckling in that state is capable of communicating the true jaundice to a great degree, and that it will not be cured, but by the recovery of the suckling mother or nurse, or unless the nurse be changed, or the infant weaned, as well as properly treated.

The true jaundice, distinguished by the skin being every where discoloured, as well as the whites of the eyes, seems to be much more common among new-born infants in France, than in this country, as appears from a memoir written by M.

* I have never met with such an instance; but M. Beaumes, who has been very attentive to the disease, is satisfied, that he once saw an infant so infected from the womb; but in this case, the child died very soon in a very diseased state, the internal part of the liver being in a state of suppuration. Other instances are given, but they are not unexceptionable. Vide *A. N. Curios. Dec. 1. A. vj. Obs. 241. Dec. iij. A. ij. Obs. 40. Fr. Delaboe. Silvius, Prax. Med. Lib. j. Cap. 46, No. xi. p. 302. Theod. Kerkring, Spicil. Obs. 57, p. 118.* I have, indeed, seen an infant, (the mother of which, however, was not icteric,) whose finger nails were, at the birth, of as deep a yellow as any icteric adult's, and very sensibly from a tinge underneath them; but those of the toes were not at all discoloured, nor had the infant any other symptoms of jaundice. It, indeed, brought up, by puking, a considerable quantity of yellow matter, apparently bile, very soon after it was born; but the tinge of the nails disappeared the next day, and the infant thrived very well.

Baumes, and to which a prize medal of the faculty of Medicine in Paris has been adjudged.

In that work, the various causes and nature of the disease are distinguished; and a corresponding treatment is pointed out with great accuracy and judgment. Throughout the tract, there seems also to be much ingenious and plausible theory; though I cannot agree with that able physician, in supposing the jaundice to be occasioned by the retention of the meconium, otherwise than from this viscid matter sometimes obstructing the orifice of the biliary ducts. For in the several instances I have met with, of the most obstinate retention of that secretion, there has not been the least disposition to jaundice; nor can I conceive, that any part of the meconium is usually absorbed in icteric cases, as M. Baumes has imagined; neither does such an incident appear to be necessary in order to account for the frequency of the disease in France or elsewhere.

As to the treatment, under the different circumstances there described, I meet with nothing that militates against the more general account I have given of this disease, or the treatment adapted to it, under the form wherein it appears in this country.

There are not wanting evidences of this disease, both in the more slight and severe forms of it, being in some families hereditary; of the former, Morgagni has furnished a remarkable example in his own family; and of the latter, Mr. Pearson has favoured me with a very curious one, which the reader cannot fail to be pleased with, as no such instance, I believe, is to be found upon record. I shall submit the account in his own words, and without any comment; as further experience is necessary to enable us to draw any practical inferences.

Mr. Pearson's account runs thus:

Mrs. J. had been the mother of eleven children; on nine of which the jaundice appeared a few days after they were born, and they all died within the period of a month after their birth. The tenth child lived six years, was then afflicted with the jaundice, and died. In May, 1796, Mrs. J. was delivered

of her eleventh child; on the third day after its birth, the skin became yellow, and the child was at the same time remarkably torpid and sleepy, and seemed to be slightly convulsed. On the following days, the colour of the skin often varied, being sometimes of a deeper yellow, and at other times nearly regaining its natural colour; the child continued, however, in the same languid and almost insensible state, but received nourishment, and sucked the breast of its mother, till within a few hours of its death, which took place on the ninth day. I opened the body of this child the day after it died, and shall now proceed to describe the appearances exhibited on dissection.

The skin had nearly lost its yellow colour; and the child did not appear at all reduced by the disease. The liver was almost twice its natural size; the whole concave surface of the right lobe had a livid appearance, but this dark colour did not penetrate above a line or two, and the internal substance was sound and healthy. The convex part of the liver was of the natural colour and firmness, except on the margin of both the lobes; there the thin edge exhibited a highly injected appearance; the redness was, however, less vivid and remarkable on the left lobe than on the right. There was also a slight adhesion of the lower part of the right lobe to the peritonæum. The gall-bladder was nearly filled with bile, of a deep yellow colour, and its ducts were permeable. The stomach was in a natural state, and the intestines were without any marks of disease. In the thorax, the lungs were of a healthy appearance. The heart seemed to be larger than common, and the blood-vessels on its surface were remarkably turgid. The right auricle was distended with blood, and the pericardium contained about a table spoonful of water. Every person who is conversant with the diseases of children, knows that, although new-born infants are sometimes affected with the true jaundice, requiring its appropriate remedy, this appearance is at others but of little importance, and sometimes even disappears spontaneously. Morgagni has furnished a remarkable example of this in his own family.—*De quindecim filiis meis, cum mox a partu flavi omnes, et nonnulli etiam haud ita leviter, essent facti, cunctis per se, nullo prorsus*

artis auxilio, paulatim icterus solutus est. Lib. iij. Epist. 48. Art. 60.

ERYSIPELAS INFANTILE.

In a former edition it was observed, that this complaint, (noticed under the term, anomalous inflammation,) did not appear to have been distinctly noticed by any preceding writer. But I have since found that Hoffman, though he makes no mention of any such complaint in his *Morbi Infantum*, has the following intimation in his chapter de *Febre Erysipelacea*,* and it should therefore seem, was acquainted with that species of the disease which appears in the more precise form of erysipelas; but which he had noticed only in the region of the belly.—“*Umbilicalem regionem in infantibus frequentius infestat, ac inde per abdomen, spargitur, cum gravibus pathematibus, funesto ut plurimum eventu.*” The French have likewise spoken of a somewhat similar affection, combined with different endemic complaints infecting crowded hospitals: and it is certainly sometimes found to follow disorders of the first passages. The disease, however, not appearing to have been any where noticed in its simple and genuine form, it has seemed necessary to give a name to the disease; which, therefore, in my latter editions, has been termed *Erysipelas Infantile*.

It is a very dangerous species of the spurious or erysipelalous inflammation, which I have not often met with, but in lying-in hospitals. The ordinary time of its attack having been a few days after birth, it was at first thought never to appear later than the month; but this has been since found not to be the case. It seizes the most robust, as well as delicate children, and in an instantaneous manner; the progress is rapid; the skin turns of a purplish hue, and soon becomes exceedingly hard.

The milder species of it often appears on the fingers and hands, or the feet and ancles, and sometimes upon or near the joints; forming matter in a very short time. The more violent kind is generally seated about the pubes, and extends

* Sec. i. Cap. 13.

upwards on the belly, and down the thighs and legs; though sometimes it begins in the neck, and is equally fatal. The fact, indeed, seems to be, that it is generally far more dangerous when it seizes, or spreads to any parts of the body, than when confined to the limbs. The swelling is but moderate; but after becoming hard, the parts turn purple, livid, and very often sphacelate, especially in boys, when it falls on the scrotum; the penis swells, and the prepuce then puts on that kind of emphysematous appearance, which it has when a stone is sticking in the passage; or in the anasarca of the scrotum.

Upon examining several bodies after death, the contents of the belly have frequently been found glued together, and their surface covered with inflammatory exudation, exactly similar to that found in women who have died of puerperal fever. 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.

Upon the complaint being first noticed in the British Lying-in Hospital, various means were made use of without success: the progress of the inflammation has seemed, indeed, to be checked for a while by saturnine fomentations and poultices, applied on the very first appearance of the inflammation; but it soon spread, and a gangrene presently came on; or where matter has been formed, the tender infant has sunk under the discharge. It is now several years since I proposed making a trial of the bark, to which, sometimes, a little *confectio aromatica* has been added: from which period several have recovered. Some time after this, linen compresses, wrung out of camphorated spirit, were applied in the place of the *aqua lithargyri acetati*, and have proved more successful in checking the inflammation in several instances;* neverthe-

* Fomentations made of extract of poppies, diffused in warm water, and poultices, consisting of the same fluid, and crumbs of bread, have been beneficial in many instances.—S. M.

less, the greater number of infants attacked with this disorder, sink under its violence, and many of them in a very few days.

In a few instances, the disease has been attended with some varieties. Infants have not only come into the world with several hard, and sub-livid 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, the bark and cordials must be exhibited liberally, and the inflamed and mortified parts be well fomented, and dressed with warm applications.

From the good effects attending these means, particularly on a very copious use of the bark, there is further room to hope that we may be yet more successful in the treatment of this formidable disease.

In two instances, where the bodies of infants dying of this disease were examined by Dr. T. Walshman, the stomach, lungs, and other internal parts, were found very much diseased; the former being in so tender a state as to give way upon the slightest pressure: whether any thing of this kind usually takes place in consequence of this disease, further examinations must evince. Such a state of the stomach is, however, by no means peculiar to this disorder, being met with in the examination of scrofulous and hectic children; and occurred also in the body of an infant which I examined, that had lived to be only six days old; and in this instance, likewise, the intestines, kidneys, and other parts, were greatly diseased.

[This disease prevails in seasons or states of the atmosphere when puerperal diseases are common. The prognosis in lying-in hospitals is generally unfavourable; but in private dwellings and less confined air infants usually recover. The treatment which we have found most beneficial is to clear the bowels with one grain of calomel and two grains of rhubarb, followed by ʒj. of castor oil. Cinchona is then to be libe-

rally given, in combination with ammonia, in the following form :—

R.—Decocti Cinchonæ, ℥iiss.

Extract, ℥j.

Ammoniæ sesquicarbonatis, ℥ss.

Syrupi Aurantii, ℥iv. M. ft. mistura.

Sit dosis cochlear parvum omni vel 2^{da} quaque horâ.

Linen moistened with the following lotion is to be applied frequently to the parts.

R.—Decocti Papaveris, ℥viiss.

Tincturæ Opii, ℥ss.

M. fiat Lotio.

The infant is to be supported at the breast, and removed into a purer atmosphere; and if very feeble, a tea spoonful of white wine whey may be given occasionally. When the mother and infant have been removed from the hospital, the infant has commonly done well.

We have now and then used the argentum nitratis as an application; but we cannot speak so favourably of it as in the erysipelas of adults, where we can bear the strongest testimony to its good effects.—H. D.]

CORYZA MALIGNA, OR MORBID SNUFFLES.

I have given this appellation to an uncommon discharge from the nostrils, taking place in the month, usually in the first or second week after birth; and in one or two instances the infant has seemed to be born with it. This disease has passed under the name of the snuffles, on account of the kind of noise such infants make in respiration; but it is not only a far more severe, but a very different complaint from the one commonly intended by that name. The discharge is much more abundant than that arising from taking cold, and is truly puru-

lent from the beginning, and afterwards sanious: though, in a few instances, children affected with every other symptom of this disorder have no discharge from the nose. But under every form of the disease infants always appear weakly, though without any precise complaint, and are constantly incommoded from the stoppage of the head, especially in their sleep; during which they breathe with difficulty. It generally continues for several weeks; and, upon its going off, children who have had the disorder only slightly, have become otherwise unwell, and such as have been brought up by hand, have been dangerously ill in their bowels.

The plan of treatment which I adopted in the first instances I met with, was to keep the body cool and open; or if the infant happened to be over-purged, or was languid, to administer absorbents and cordials. I recommended the nurse's diet to be attended to when the child was suckled, and to keep a little blister open on its head, or on the nape of the neck; but this has since appeared, in some instances, to be hazardous, although no evil ever ensued where I had directed it.

I had attained no further knowledge of this complaint, when Dr. Denman, who had met with it more frequently than any other practitioner, obliged the public with more ample details concerning it.

His account of it is so accurate, that I shall in this edition likewise borrow the description of its principal symptoms from him, adding to it such as later experience has furnished. He remarks, that this disease seemed to be new in its manner, though not in its kind, at the time of its first making its appearance, which was frequently in the summer of the year 1790; in the June of which year it was that I also first saw it.

After mentioning the little varieties noticed in the discharge, and the most formidable symptom of the disease, the difficulty of breathing through the nose, he observes, that the latter was not constant; and that when free from it, children appeared to be in no danger; that the difficulty of breathing was at other times so great, as to require an attendant to watch a child sleeping and waking, in order to open its mouth as often as it might be requisite.

Dr. Denman further notices a singular purple streak at the verge of the eyelids, which he afterwards considered in a manner pathognomonic of the disease; and, indeed, I have rarely met with the disease without it. He describes also a general fulness about the throat and neck externally, taking place soon after the commencement of the complaint, which he seems to date from the appearance of the purulent discharge from the nose; though it has been remarked, that this symptom, although one of the most formidable, may be entirely wanting.

That when these symptoms had continued for some days, according to the strength of the patient, and degree of the disease, children become pale and languid; and that, upon looking into the throat, the tonsils were found tumefied, and of a dark red colour, with ash-coloured specks upon them, and in some there were extensive ulcerations. The parts on which blisters had been applied in the beginning of the disease, and which had been apparently healed, often sphacelated towards the conclusion.

The infants, he reports, gradually declined in their strength, and had a particular catch in respiration, as if the velum pendulum palati were elongated. They were unable to suck, though not universally; swallowed with difficulty whatever was given in a spoon; and died in convulsions, or with all the marks of great debility, though not on any particular day of the disease.

Dr. Denman observes, that in the course of eight months he had attended eight children in this disorder, six of whom died; that the body of one of them was afterwards opened by the late Mr. Hunter and Mr. Home, but that nothing was discovered, except that the membrane lining the nose was of a dark red colour, and its blood-vessels more turgid than ordinary. Dr. Denman, by a fortunate occurrence, having discovered the true nature of this disease, has, in consequence, happily adapted a remedy that has proved an almost certain cure for it, if attended to in time.

The true source then appears to be a defluxion and inflammation over all that extent of the Schneiderian membrane, lining the antrum highmorianum, posterior nostrils, and con-

tiguous parts. Hence the copious secretion of purulent matter irritates the trachea, and produces the spasm, and croaking noise, with recurring sense of suffocation, so uniformly observed in this disease. By descending into the stomach and bowels, it disorders these parts; and if not very soon properly treated, induces such general disease as presently debilitates, and at an uncertain, but generally an early period, carries off the little patient in the manner that has been already described. The stools, it may be noticed, are sometimes thick and pasty, and when otherwise, after repeated purges, they are of a peculiar green colour, or sometimes blue, different from what I have noticed on almost any other occasion.

From this account of the disorder, an attention to the state of the bowels, as I intimated in the first instance I had seen of it, is the manifest indication; but with this further light thrown upon it by Dr. Denman, that keeping them very open, so as to prevent the lodgment of the matter falling into them, is the grand mean of cure; there being much less to be effected by absorbents and antacids to correct the constant sourness and ill-condition of the stools, than by carrying them off speedily and frequently.

To this end, one or more tea-spoonfuls of castor-oil should be given every day, so as to procure three or four motions daily. If the child should be weakened by this means, some cordial medicine should be occasionally interposed; or should this prove insufficient to support the infant, the purgative must be somewhat abated; but it is remarkable, that even weak infants endure purging better under this complaint than any other, unless it be the tooth fever. If a convulsion fit should supervene, as it sometimes does, clysters, and the usual remedies for spasm, should be administered, and especially the cordial, which, breaking off wind from the stomach, and giving tone to the bowels, becomes a very useful one in this case. In several instances, a recourse to opium, or syrup of white poppies, has been attended with good effect; and may, in that case, be administered every night, when the purgative has operated properly. One good medicine in many cases is Dalby's carminative, which may be given every six or eight

hours; and particularly when repeated doses of the laxative medicine are given through the day. From eight to twenty drops, or more, may, in that case, be given between each dose of the purgative; and has, in some instances, been considered as a principal mean of cure.

Under such treatment the morbid snuffles have been found to yield in the course of two or three weeks; some purging medicine being continued as long as the discharge or difficulty of breathing shall remain. It, however, sometimes runs on as much longer, and is attended with a spasm in respiration, as if the infant were dying; this symptom, as well as the snuffling, often recurring some time after an infant has seemed to be cured; and in one case, not only the snuffling, but the discharge recurred more than once, after the disorder seemed wholly to have given way. In such instances, besides purging, it has been thought useful to foment the bridge of the nose, and afterwards apply some aromatic liniment.

When the disorder is found not only to hang on for many weeks, (as it sometimes will even where it has not been peculiarly violent,) but, together with the continued use of purges, to keep the infant pallid and feeble, notwithstanding the exhibition of cordial medicines; a recourse to the decoction of oak-bark has at once removed the snuffling, and given vigour to the child in the course even of a few days. A remedy that does not seem to be sufficiently known, for this and many other complaints. Indeed, where a tonic medicine is found necessary, but where either from a febrile diathesis, or a disposition to glandular obstructions, the cortex peruvianus may be thought inexpedient, the oak-bark will generally be found a safe and efficacious medicine.

It is only necessary to add, that though this disorder is not usually met with after the month, I have seen it at a more advanced age; in one, or more instances, however, it has been thought, I know not how justly, that some slight symptoms of it had, in that case, appeared in the month.

[Although we have frequently seen the morbid snuffles to a very considerable extent, accompanied with a most profuse muco-purulent discharge, to the great distress of the infant,

who is unable to suck, and breathes with much difficulty, we have never seen the fatal form here described. Billard mentions coryza, with peculiar concretions, as being accompanied with an exudation of false membrane where the children have sunk very quickly under the disease. Burns speaks of a copious fetid discharge from the nose where the mucus dries, and comes away in flakes.

The prognosis is for the most part favourable, although the disease is often protracted in damp, cold weather.

Treatment.—First, the infant should be kept in a warm, free atmosphere, or, in other words, a warm, well-aired apartment; secondly, the occasional exhibition of an emetic clears the air-passages, thus enabling the infant to suck and breathe. This we have found to be particularly beneficial. Thirdly, we must stimulate the bowels and skin by mild, saline aperients, and on some occasions the nostrils are to be injected with a weak solution of sulphate of zinc, in the proportion of gr. i. to ʒi. of rose water.—H. D.]

INWARD-FITS.

It has been already said, that any derangement of the first passages is capable of giving rise to various complaints, among which, that of inward-fits has been taken notice of by some medical people, but I think scarcely deserves the name of a disease. It demands attention, however, because so much has been said about it as to create apprehensions, lest this subtle disease should be insensibly at work, and insidiously making way for more severe and outward convulsions.

This complaint may take place at any period of early infancy, and is thought to be more dangerous the younger the infant may be. A constant symptom in this kind of fit, as it is called, is the infant's mouth being drawn into a smile, which, whoever has noticed it, must have beheld with pleasure. And if the complaint extends no further than this smiling, which is generally while the child is asleep, it arises merely from wind, and is certainly harmless, because, in this case, the wind is not really confined; and, therefore, an immediate

recourse to emetics, or purges, is more likely to do harm, by straining the stomach, or by relaxing the bowels, than to do any good. Every body is acquainted with the effects of different degrees of irritation of the nerves, from the sensation produced by tickling with a feather, to that of a hard gripe, or a violent stroke. The first may be said to be pleasing; and such, I doubt not, is the stimulus in question on the nervous coat of the stomach of infants; and, therefore, it produces so agreeable a smile, that I could never consider it as an indication of mischief any more than of pain. Indeed, I know of no complaint that ought to be termed inward-fits; and I mention this, because nurses are continually talking to us about them, when children are perfectly well, and often give the fond parent needless distress, as well as many an unpleasant medicine to the child. They, at the same time, treat the true convulsion, whilst slight, in the same way, being led into the error by the idea of inward-fits; a term they are ever using, but have no precise ideas of, nor do any two of them intend the same thing. It would be better if the term were altogether abolished, and the word *fit* used only when the child is evidently convulsed. Infants, as well as adults, do sometimes, indeed, die suddenly without any manifest convulsion. But this more frequently happens after over-feeding, and arises from a spasm of the stomach (of which I shall treat at large, in the chapter on true convulsions); or sometimes of the heart or lungs; and infants may then be said to die of inward-fits, there being no external convulsion.

[The remedies commonly employed by nurses, and others, for relieving those inward-fits, as they are called, are Dalby's carminative, Godfrey's cordial, soot drops, assafoetida drops, and other stimulants and carminatives, composed of various warm and spicy drugs. These, being found generally efficacious in removing the complaint when it depends upon wind, are considered the best possible remedies for all kinds of fits, and are given with an unsparing hand, in inflammatory attacks, if there be any resemblance, real or supposed, to fits. It is obvious, that when such remedies are employed at the com-

mencement of the *true* convulsion fits, they must be extremely prejudicial.—S. M.]

Infants are likewise carried off suddenly from water in the head, of which I have seen two instances in the same family. (where the disease was ascertained by opening the cranium,) both the children appearing perfectly well only a few minutes before they died; but neither of these was, by any means, the kind of affection usually understood by the term inward-fits. If the infant should sleep too long, and the smiling above mentioned should often return, the infant may be taken up, gently tapped on the back, and its stomach and belly be well rubbed by the fire, which is all that can be necessary. This gentle exercise will occasion a discharge of wind from its stomach, and the child will go to sleep again quietly.

This complaint, however, is largely treated of by some writers, and Dr. Armstrong recommends to give a few drops of the wine of antimony; but it is very apparent, that when he considers it as worthy of more attention than I have just now advised, it is either a true convulsion, in which the eyes are distorted, and the mouth is discomposed, instead of putting on a smile; or else he is prescribing for another disease under the name of inward-fits, which former writers have treated under the head of disorders arising from costiveness and wind. But if this little turn of the features should arise, as frequently happens, from constant over-feeding, it were endless to administer emetics; the cause of the complaint is obvious and upon the removal of it the remedy must rest.

Such has ever been my opinion of this much-talked of complaint; and I have not, after a great deal of attention to infants, seen any thing sufficient to induce me to alter it; or I should have suppressed the preceding observations. As I wish, however, to afford all the information I can on every complaint, I have to observe, that a gentleman of great respectability and experience has conceived, that though the term inward-fits has been often misapplied, there is really such a complaint, and that it generally proves fatal. Besides a little blueness of the lips, and slight turning up of the eyes

often noticed by nurses, this complaint is described as attended with a *peculiar sound of the voice*, (somewhat like the croup,) and a very quick breathing at intervals; and is supposed to arise from a spasm in the stomach, lungs, or other vital organ.* A spasm I have, indeed, too frequently seen, but certainly very different from that usually accounted inward-fits.

These symptoms are said *frequently to attack the child in its sleep*: and in their commencement will go off upon taking it up from its cradle. They are likewise observed to be induced by sucking or feeding, and to be increased upon any little *exertion of body*, or *transient surprise*, and in this manner to recur for a length of time, before they become alarming. The remedies proposed for the cure of this complaint, are an emetic on the first attack, and afterwards volatiles and fetids; but, as it has been observed, very seldom to good effect.

These symptoms, indeed, I have frequently met with; and however alarming their appearance, if they be not accompanied with any other, they have fortunately turned out more favourably than this complaint is reported to do. Hitherto, at least, I have succeeded in removing this extraordinary spasm, in every instance, by treating it, as I had before hinted, as a chronical croup, by administering different anti-spasmodics; assafoetida, ol. succini. tinct. fulig. musk, or cicuta, being prescribed as particular circumstances have indicated; and so

* The disease here spoken of by Dr. Underwood, is, I conceive, the same that has been so well described by Dr. Clarke, in his Commentaries, under the title of "A peculiar Species of Convulsion in Infant Children." It is by no means an uncommon affection of children, arising generally from *improper feeding*, and close and confined apartments. If timely attended to, the complaint commonly yields to *daily aperients*, so as to produce at least two copious motions; and continued doses of soda, or a strong infusion of burnt sponge, with proper attention to diet and regimen. When the head is manifestly affected, cupping glasses behind the ears are required; but when the patient has *cold, pale, flabby cheeks*, as I have not unfrequently observed in this disease, abstraction of blood is rather injurious than beneficial.

In two cases of this kind, which were under my care nearly at the same time, *the children died in the fits*. They were both opened by Mr. Sweatman, a very skilful anatomist, but *not the slightest appearance of cerebral affection* could be discovered in either of them. The principal deranged structure discovered, was a collection of small glandular swellings in the neck, pressing upon the par vagum.—S. M.

far from its generally proving fatal, I have not been able to learn, by the most diligent inquiries, that any children so affected, excepting two out of the numbers I have attended, have been carried off suddenly, or by any thing resembling this complaint. I have, indeed, very frequently seen what I have termed the chronical croup, in children of various ages, and indiscriminately in those nourished by the spoon, or the breast. I have known it attended with severe and repeated epileptic fits; (and then the bowels have usually been costive, or the stools very clayey;) but in every instance, the crouping noise has yielded, and (with the exceptions above-mentioned) children have continued well, treated in the manner I have described; and I therefore cannot but think the complaint under consideration is of that kind.

In regard to costiveness and wind, which have been said to be the parent of what nurses commonly term inward-fits, as they do not always arise from one and the same cause, and are productive of other complaints than those above mentioned, I shall consider them by themselves; which, it is presumed, will be pursuing a more rational plan, than adhering to a term obscure in itself, and indicative of a disease not well defined, and which, therefore, may tend to mislead the inexperienced reader.

[The following is the description of this complaint given by Dr. J. Clarke:—

“ This convulsive affection occurs by paroxysms, with longer or shorter intervals between them, and of longer or shorter duration in different cases, and in the same case at different times.

“ It consists in a peculiar mode of inspiration, which it is difficult accurately to describe.

“ The child having had no apparent warning, is suddenly seized with a spasmodic inspiration, consisting of distinct attempts to fill the chest, between each of which a squeaking noise is often made; the eyes stare, and the child is evidently in great distress; the face and the extremities, if the paroxysm continues long, become purple, the head is thrown backward, and the spine is often bent, as in opisthotonos; at length,

strong expiration takes place, a fit of crying generally succeeds, and the child, evidently much exhausted, often falls asleep.

“ In one of these attacks a child sometimes, but not frequently, dies.

“ They usually occur many times in the course of the day, and are often brought on by straining, by exercise, and by fretting; and sometimes they come on from no apparent cause.

“ They very commonly take place after a full meal, and they often occur immediately upon waking from sleep, though before the time of waking, the child had been lying in a most tranquil state. As the breathing is affected by these paroxysms, the complaint is generally referred to the organs of respiration, and it has been sometimes called chronic croup; but it is very different from croup, and is altogether of a convulsive character, arising from the same causes, and is relieved by the same remedies as other convulsive affections.

“ Accompanying these symptoms, a bending of the toes downwards, clenching of the fists, and the insertion of the thumbs into the palm of the hands, and bending the fingers upon them, is sometimes found, not only during the paroxysm, but at other times.

“ Clenching the fist with the thumb inserted into the palm of the hand, often exists for a long time in children, without being much observed, yet it is always to be considered as an unfavourable symptom, and frequently is a forerunner of convulsive disorders, being itself a spasmodic affection.

“ It rarely happens that a child recovers from an attack of this sort, unless the progress of the disorder has been interrupted by a timely application of proper remedies, without a general convulsion. Then the friends become alarmed, and a disease, which had existed for two or three months, is for the first time considered to be important enough to require medical assistance, after all the farrago of popular medicines, such as fit-drops, soot-drops, assafoetida, &c. have been ineffectually applied.

“ Convulsions of this description seldom, if ever, occur after

the expiration of the third year of a child's life, and not often in children which have lived by sucking, till they have teeth, and have never taken animal food till the dentes cuspидati have come through the gums; this, however, is liable to some exceptions."*—M. H.]

[It has been recently attempted to found the pathology of this interesting disease upon observations, such as that adduced by Dr. Merriman, (p. 141,) but, I think, unsuccessfully.

In the first place, as far as my memory and judgment serve me, the cases adduced, to support this view, are not cases in point, but, in reality, cases of other diseases.

Secondly, supposing pressure upon the par vagum to exist, it would induce totally different phenomena from those actually observed in this disease; and it would not explain the *series* of phenomena which actually occur in it: for,

1. Such pressure would induce simple *paralysis*.

This would, in the first place, affect the recurrent nerve, and the dilator muscles of the larynx; it would not induce a partial but *constant* closure of that orifice,—a permanent state of dyspnœa, such as occurred in the experiments of Legallois, or such as is observed to be excited in horses affected with the "*cornage*," or *roaring*.

Secondly, it would induce paralysis of the inferior portion of the pneumogastric, with congestion in the lung or lungs, and the well-known effects upon the stomach, of the division of this nerve.

2. The disease in question, on the contrary, variously designated "*peculiar convulsion*," "*spasm of the glottis*," &c. is obviously a *part* of a more general *spasmodic* affection, and frequently, indeed most frequently, comes on in the midst of the first *sleep*, in the most *sudden* manner, receding equally *suddenly*, to return, perhaps, as before, after various intervals, of days, weeks, or even months. Very unlike paralysis from *any* cause.

3. It not unfrequently involves, or accompanies, as I have said, *other* affections, *indisputably spasmodic*, as distortion of

* Commentaries on Diseases of Children, by Dr. John Clarke, Part I. pp. 86—90

the face, strabismus, contraction of the thumbs to the palms of the hands,—of the wrist, feet, toes,—general convulsions! sudden dissolution!—a series of phenomena totally unallied to paralysis.

4. Indeed, the larynx is sometimes *absolutely closed*,—an effect which *paralysis* of the recurrent nerve, and of its dilator muscles, *cannot* effect.

5. Paralysis from the pressure of diseased glands would be a far *less curable* disease, a far *less variable* disease, a far *less suddenly fatal* disease, than the croup-like convulsion.

Thirdly, almost all recent cases are at once relieved by attention to three or four things: viz. the state, 1, of the *teeth*,—2, of the *diet*,—3, of the *bowels*: and, 4, by change of *air*;—they are as obviously produced or reproduced by the agency of errors in one or more of these.

Fourthly; In fact, the croup-like convulsion is a *spasmodic* disease, excited by causes situated in the nervous centres, or eccentrically from them; in a case of spina bifida, a croupy and convulsive inspiration was induced by gentle pressure on the spinal tumor; in cases from teething, the attack has been induced and removed many times, by freely *lancing the gums*; and when it has arisen from crudities, it has been relieved by emetics, and purgatives, and by change of air, &c.

Fifthly, there is a series of facts which prove the connexion of this disease with other forms of convulsions in children, and with epilepsy in the adult subject.

Sixthly, in protracted cases, congestion and effusion within the head occur as *effects* of this disease.

Lastly, innumerable cases of undoubted croup-like convulsion have occurred, in which no enlarged glands could be detected in any part of the course of the pneumogastric nerve.

I would not be supposed to speak with undue confidence, when I venture to *suggest* another view of this matter as nearer the truth: viz. that this disease is induced through the *fifth* pair of nerves in *teething*, the *eighth* in indigestion, and spinal nerves in constipation, as parts of a system of nerves endued with a peculiar function which I have denominated the

reflex.* However this may be, the view itself *points* to the most useful and efficient *remedies*, and this is highly important: it points to the teeth, indigestion, and constipation, as *causes*, and to the well-known means of removing them; it points to the important objects involved in change of air, mental quiet, &c.

If, instead of the popular remedy, (the warm bath), the *gum-lancet*, and the full warm water *clyster*, were *instantly* administered, many little patients would be saved from the effects of this terrible disease. The diet should be barley-water only.—M. H.]

The foregoing disease, “The peculiar species of convulsion” of Dr. J. Clarke appears to be identical with the “laryngismus stridulus, of Drs. Good and Ley, the “child-crowing” of Dr. Gooch, the “spasmodic affection of the chest and larynx in young children, attended with general and partial convulsions” of Mr. North, and the “spasm of the glottis” of Sir H. Marsh.

From a good deal of experience in the treatment of this frequently fatal disease, (of which we wrote some account in the 13th volume of the Medical Repository,) we consider it, when once complicated with convulsions, be the cause what it may, one of the most treacherous maladies children are subject to, and that a child so affected is never safe till it is three years old, or has cut all its teeth. Moreover, although some time may have elapsed since the occurrence of a convulsive paroxysm, and the child appears well and thriving, any excitement from pleasure or pain may cause the suffocative spasm, and carry it off suddenly.

In the majority of cases, if not in all, the disease depends on painful dentition; and that, although it may occur before dentition is indicated by a swollen gum, or projecting tooth; for we believe that before these signs the process may distress and irritate the infant.

The effect which arises from any source of irritation will depend on the particular constitution or temperament of the individual: in one causing pain without any general disturbance, in a second fever, in a third convulsions.

* See the Philosophical Transactions for 1833.

Whatever train of symptoms an infantile disease commences with, or in whatever part of the body derangement of function or disease of structure may primarily be situated, the irritation endured by that part may be reflected upon the brain, and convulsions follow, as a symptom of the cerebral reaction upon the muscular structure; and it is an undoubted fact that in children there is a strong disposition to cerebral affections.

In some the disease is complicated with remittent fever; in others, with marasmus, with enlarged mesenteric glands; in others, with diseases of the viscera of the chest, or the heart and lungs, or with disease of the glandular system generally.

In some families there is a constitutional tendency to this disease.

The age of attack has been between the seventh month and two years and a half; the greater number from the tenth month to the fourteenth. Most of the children were of strumous diathesis, and sensitive.

In all those lately examined the tonsils have been enlarged, the fauces puffy and swollen, and the uvula frequently elongated; in one there was obstinate constipation, with dysuria. Every time the child passed urine, the spasmodic respiration was induced. In those that died, the diseased appearances of the brain were not generally such as to account for the severity of the convulsive paroxysms. In most, the vessels of the base were turgid, and perhaps there was a little more fluid in the ventricles than is usually found there. In some the substance was softer than natural; in one there were about 3ij. of fluid in the ventricles, which communicated freely under the anterior crura of the fornix. In the right lateral ventricle the anterior part of the corpus striatum was somewhat prominent, the surface granulated, and of caseous texture, to about the size of a walnut. This child, contrary to what is generally observed during the paroxysm, always inclined its body forward, instead of backward, spreading out its hands as if to ward off the approach of anything; afterwards contracting the hands and toes, more particularly the left hand and foot, which were purple. It may be further remarked, that the

diseased portion of brain was on the right side, while the left arm and leg were the most permanently affected.

In one case the thymus gland was unusually large, without any apparent disease; in another, it had a tuberculated appearance, which also existed in the lungs.

In one, examined with Dr. Robert Lee, the ileum presented a singular appearance. A great number of small yellow bodies were seen through its peritoneal coat. On laying open this portion of intestine, the mucous membrane was found studded over with small yellow bodies, varying from the size of millet seeds to that of pearl barley. In several of these an ulcerated depression was visible on the summit; in some places these had coalesced, and the mucous membrane itself was ragged and ulcerated. The peritoneum covering these ulcerated parts was redder than elsewhere; the remaining portion of intestine was healthy. Except a slight aphthous affection, the child had no symptom of any disease of the digestive canal; it had lived entirely on the breast-milk of its mother (a healthy woman); it had never had more than a dose or two of castor oil in its life ($7\frac{1}{2}$ months); the mother was very attentive to the regularity of its bowels and general health on account of the sonorous breathing. It had had one convulsive paroxysm *three weeks before*, but so short, and followed by so perfect a recovery, that nothing more was thought of it. In the second fit, when appearing more lively than usual in its mother's arms, it was attacked suddenly with difficulty of breathing, followed by convulsion, and died in five minutes. In all the cases there was froth and mucus in the larynx and trachea, and in some the glottis was peculiarly small.

In the treatment of this disease we should endeavour to remove the exciting cause, to obviate any prominent symptom by suitable means, and uphold the general health. To fulfil these intentions, the gums should be freely lanced over any teeth whose appearance may next be expected, whether there be any indication of their approach to the surface, or not. The digestive organs should be carefully attended to, and the bowels well opened, first by an efficient dose of calomel, followed by a saline purgative, with senna, if the child be of

robust habit, or castor oil, if feeble; either may be assisted, if requisite, by an enema; and if the motions are pale, or of a clay colour, repeated small or alterative doses of calomel, or *hydrarg. cum cretâ*, should be given, with an occasional purgative, till they assume a proper colour. If there be much irritation or fretfulness, the tincture of hyoscyamus will be found a valuable remedy, with some saline; or, if there be dysuria, with the *sp. ætheris nitrici*, and some demulcent, as the *mistura amygdalæ*, the warm pediluvium, or general tepid bath may be used at night; either of which tranquillizes much; the pediluvium causing less disturbance, is often more suitable. Should the infant be restless, and have sleepless nights, and there be nothing contraindicating it, a grain of *pulvis ipecacuanæ comp.* is an excellent narcotic.

If the infant be at the breast, let it be confined to that; if recently weaned, and the diet has seemed to disagree, the chances of its well doing will be greatly increased by its being again supported on breast-milk. If long weaned, let the diet be that appropriate to its age, most carefully and scrupulously regulated. The head should be kept cool, and the child freely exposed to the air, and not excited in any manner whatever. The fauces should be looked to, and if red or swollen, a solution of nitrate of silver, eight grains to the ounce of distilled water, or in less urgent cases, acidulated syrup, as ʒj. of dilute sulphuric acid, or more, to ʒvii. of syrup of poppies, should be freely applied twice daily by means of a hair pencil. I have no hesitation in stating (in which I am borne out by the observation of others), that I have seen the most decided advantage from these applications, to which my attention was first called by the perusal of Dr. Ley's work.

If the general convulsion has occurred, the application of four or six leeches to the occipital region will be a useful precautionary measure; and in the event of cerebral affection supervening, it must be met by the most prompt and vigorous treatment applicable to that state.

We should endeavour to give power to the feeble by suitable tonics, of which the preparations of iron are the best; and in the cases under discussion the *vin. ferri* most so; where

there is much languor it may be combined with carbonate of ammonia, and in irritable habits also, with conium, or hyoscyamus. Quinine is highly recommended. We have no experience of this medicine in children, as we have always thought it too concentrated a preparation for their diseases. The tincture of hop is also recommended as being both sedative and tonic. Free exposure to fresh air is the most beneficial tonic to children; and when the more formidable symptoms are relieved, removal to the country is strongly to be recommended. In the case complicated with obstinate constipation and dysuria, the child was so reduced, that it was upheld by the administration of brandy in breast milk. It had no general convulsion after the second day, and no crowing inspiration after the seventh. It went out of town about the twelfth day, had no return of the disease, cut all its teeth quickly, and is now a hale, stout young man.

As a prophylactic, the application of the acidulated syrup is useful. In a case, where three children had been previously lost, it was applied by Mr. Morgan, of Bedford-place, other circumstances, of course, being carefully attended to, and was considered by him and the anxious mother as being most beneficial. The child had whooping-cough in its second year; the young lady is now a fine girl seven years of age, but is very sensitive. On any derangement about the throat, we were informed by her mother, that she applies the syrup, which always relieves her. H. D.

DISORDERS ARISING FROM CONSTIPATION AND WIND.

Constipation is either constitutional or accidental, which ought always to be distinguished; the former being oftentimes harmless; and, indeed, children of such a habit of body are frequently the most thriving. If the mother should be very constipated, her children often are so; and such a disposition (while they continue in health) ought not to be forcibly counteracted, though it would be prudent carefully to watch it. And this will be especially necessary, in the case of children who are subject to fits; fine lusty infants being often seized with

violent convulsions, without any other apparent cause than a naturally very costive state of the bowels, and these have uniformly recovered from the fits, merely by procuring stools and breaking off the wind. It is likewise sometimes an incitement to recurrent fever, as I have noticed in one of the finest and otherwise healthy children I have seen, who relapsed for two or three years into repeated fevers, seemingly from no other cause than a naturally very constipated state of the bowels, which it was scarcely possible, either by diet or medicine, duly to counteract. The above-mentioned disposition to fits has taken place long before the ordinary period of teething, and has continued till children have been a twelvemonth old; at which time the solids, and especially the nervous system, have appeared to get stronger. In such habits, a quarter of an ounce of manna, or the like quantity of the syrup of roses, or of senna, may be put into any liquid, and as much of it given by tea-spoonfuls, as shall open the belly. Or should these prove insufficient, a dram of *ol. ricini* may be taken two or three times a week; or a few grains of the *pulv. fol. sennæ*, or the extract, with or without a little grated nutmeg, or cloves; or a few drops of the *tinct. aloes comp.* or *tinct. jalap.* to infants of some months old. But rhubarb will not be a fit purgative, though it be joined with magnesia, which will not sufficiently counteract its restringency, and nurses ought to be cautioned on this head, with whom it is so frequent a prescription, during the month; and whose indiscriminate use of it is sometimes prejudicial. A few grains of magnesia in a spoonful of dill, or common water, and sweetened with a little manna, or syrup of roses, forms a much neater medicine, (which may be quickened and warmed by the addition of a few drops of tincture of senna,) and in costive habits, which usually abound with acidity, answers very well in early infancy.

But if the child be otherwise in health, it is, in general, inadvisable to do much to counteract the natural habit of body.*

* I have attended in many families of numerous children, all of whom have grown up strong and healthy, but been uncommonly costive, and from their infancy have been for several days without a motion; nor would any gentle means procure it steadily: and on the day when this note was made, I was consulted for an infant of

I have, even during the month, directed manna, in the dose of half an ounce at a time, to very little purpose, unless it was almost daily repeated, and have at other times given from three to five grains of jalap, till I learned that there are some constitutions, even in infants, where the bowels cannot be kept open without a daily exhibition of some purgative medicine, and that many such children are as well left to themselves, or, at least, require only to be watched. If a stool should be wanted, however, a suppository, (or dry clyster,) made of a little slip of paper, or linen-cloth, twisted up, and well moistened with oil, may be very easily introduced, and will generally answer the purpose; or should this fail, a bit of Castile soap, mallow-root, red beet, or a parsley stalk, may be introduced in like manner. These means will be assisted, and a costive habit relieved, by rubbing the stomach and bowels frequently every day with a warm hand, or a piece of flannel.

In some cases of habitual costiveness, a liniment, consisting of *liniment sapon. comp.* ℥i.; *tinct. aloes comp.* ℥ss. rubbed over the abdomen every day, for five or ten minutes, has been found very beneficial in keeping the bowels regular.—S. M.

Should such a costive and windy state of the bowels produce griping pains, which may generally be known by the drawing up of the legs, or of the scrotum, and a certain manner of crying, it will be proper to apply external warmth to the stomach and bowels, by means of heated bran, or chamomile flowers, put into a soft flannel bag; which will both tend to abate the pain, and assist the operation of the laxative. Or should the costiveness be accidental, it must speedily be remedied; and if the occasion of it be food of an improper kind, or too thick, which is very often the case, the food must be immediately changed. If the child be not usually costive, rhubarb is, indeed, often the best purgative, as it strengthens the bowels afterwards, infants being much more subject to an

only three weeks old, who had had no stool for five days, and yet was perfectly healthy and easy. This is not mentioned, indeed, to lead practitioners to abate of their attention to a costive habit of body in infants; but in proof only of its being in some instances innoxious, and therefore no cause of alarm as long as children are otherwise perfectly well.

over-purging than to almost any other complaint, especially if brought up by hand. It sometimes happens, that much more powerful medicines than rhubarb may be required, whether the child be naturally costive or not: and in such cases, much caution is necessary; for, where a proper dose of senna tea has proved ineffectual, it is surprising what large doses even of rough purges have been given in vain, or sometimes to the injury of the child. On such occasions, I would rather advise a recourse to clysters, and especially those made of Socotrine aloes. From five to twenty grains, according to the age of the infant, dissolved in boiled milk, will rarely, if ever, fail of procuring a stool, and will often procure two or three, especially if preceded by the exhibition of a purge. But even drastic clysters should be administered with caution, and ought not to be very often repeated, especially to very young children, though less hazardous, in every view, than the frequent repetition of purges of a similar kind, and when used alternately with gentle purges, they become expedient and beneficial.

Some writers, particularly the French, have much too frequently advised oil of almonds for infants of such a habit. Mr. Le Febure de Villebrune, therefore, in a note to the translation with which he has honoured my first edition of the Diseases of Children, testifies his preference of oils; but I differ from him, being persuaded there are few cases besides disorders of the chest, in which any kind of unctuous oil, but that of castor, will not be injurious to young infants, and particularly in affections of the first passages. It is doubtful, however, whether oil of almonds, or of olives, always proves a laxative, or whether, diminishing the natural force and action of the intestines, it may not frequently prove the reverse.

As there is usually too much acidity in the first passages in costive and windy habits, a little magnesia, or a few drops of *liquor potassæ subcarbonatis*, may be given for a few days after the costiveness has been removed; and if the child be suckled, the nurse's diet must be attended to. If any flatulency should still remain, (which will not often be the case, if it has arisen merely from constipation,) a little dill water, or a few drops of *spir. ammon. comp.* properly diluted, are very safe and gentle

carminatives; or should one more powerful be expedient, the fluid parts of the warm opening mixture directed in the chapter on diarrhœa may be given, without shaking up the vial. But if the flatulency be an attendant upon a lax state of the bowels and indigestion, its remedy will consist in the removal of those complaints, which will be noticed in their place. Should flatulency, however, continue, it may sometimes prove a real complaint, though it should not happen to be so confined as actually to become an occasion of fits. It is usually, indeed, but a mere symptom of some preceding or attending complaint; nor are its troublesome effects either occasioned or increased by air taken in with the food, as many people have imagined, atmospheric air being essentially different from that produced by indigestion, whether owing to the weakness of the stomach, as it is called, or the improper quality or quantity of the food taken into it. It may, however, in conjunction with other causes, prove a source of many complaints, and create watchfulness, startings, hiccoughs, vomitings, and even convulsions, if not timely attended to, especially if the infant be costive. A principal remedy in that case will consist in keeping the bowels open, with frequent friction of the stomach and abdomen; means of no small importance in every complaint connected with affections of the first passages.

The only instances that I remember to have met with of wind proving of much consequence, when not preceded by other complaints, have been very lusty new-born infants whose mothers have also been peculiarly distressed by affections of that kind. This is, indeed, a somewhat anile way of speaking, but it states the precise fact; and one instance of an infant suffering in this way was so remarkable, that it may be worth noticing in this place.

In this case, the meconium began to pass off soon after birth, but not without repeated clysters, purgatives, and the warm bath, and was peculiarly viscid, as well as in vast quantity. The infant the meanwhile appeared for several days likely to be strangled, and was black in the face, merely through the abundance of wind in the first passages, though it was breaking off both by the mouth and the bowels, and with that peculiar and very loud noise, when it came upwards, observed often-

times in the hysterical spasm of adults, and continuing, with only short intervals, for several hours together; so that the infant was several times thought to be dying. The whole face, except the nose, became exceedingly swollen, so that the infant could scarcely open its eyes, though without any discoloration of the skin; being, probably, owing to wind diffused through the cellular membrane, as hath been known to happen in the case of a small wound of the lungs from a fractured rib; the tumour subsiding immediately upon getting rid of the wind from the stomach and bowels.

These symptoms, however, yielded to carminative juleps, and purging medicines, which are all that merely windy complaints usually require; and the infant, after the meconium was all come away, was freed from every complaint, without any further semblance of fits, which before had been frequently apprehended.

[In cases of flatulence the mixture mentioned under the head "carminatives" may be beneficially given. Where the bowels are constipated, a dose of *ol. ricini* occasionally, or magnesia followed by an enema, as recommended by Dr. Marshall Hall, will be the most appropriate remedies.—H. D.]

VIGILIE, OR WATCHINGS.

Watching, or want of sleep, is frequently a symptom of the foregoing complaints, and in that case may be removed by opening the belly, and afterwards administering a carminative absorbent julep, which will then frequently act like an opiate,* by restoring rest. Sometimes, indeed, this succeeds so well when given in large doses, that we are suspected of having really given some narcotic medicine, which, doubtless, would, in these cases, prove exceedingly hurtful, as the watchfulness is generally a mere symptom, and not a disease; though, when very obstinate, it is sometimes the harbinger of epilepsy, and then requires purgative medicines.

Watchings may arise from worms, purging, or gripings, whether from acrid breast milk, or other food, and from indigestion, as well as from every thing capable of producing pain; each of which probable causes should be very atten-

* See Harris, *De Morbis Acutis Infantum*.

tively inquired into before we prescribe; and will, therefore, be distinctly considered in their proper place. The usual source may, indeed, be said to be some default in the first passages, and in very young infants frequently consists in costiveness. I shall only observe further, if watchfulness be confined only to the night, it is probable the child sleeps too long in the day time, which may be remedied by keeping it moving, and playing with it throughout the day; of which little matters, more precise notice has been taken in the part devoted to the *Management of Infants*.

APHTHÆ, OR THE THRUSH.

The Thrush is a complaint that probably depends not a little upon the different natural habits of infants, as well as upon their management, particularly in regard to food, air, and the state of the bowels. This seems to be the case, 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. Instances of the latter kind may have been noticed, where the mother happening to be ill, the whole attention of the family has been thereby engaged; or, where one infant has been put to nurse, whilst all the rest of the children have been carefully brought up at home.

It is a vulgar error, that the thrush is a very harmless complaint, and even desirable to a child in the month; for it is said, if it does not then make its appearance, it certainly will at a more advanced age, and will then prove fatal. The fact is, the thrush is a disease of debility, and, therefore, attacks very young, and very old subjects, especially if otherwise weakened. From the above foolish persuasion of its harmless nature, the disorder is often neglected in the beginning, whereby the acidity in the first passages is suffered to increase, which always aggravates the complaint. It is, indeed, a much milder disorder in this island, than on most parts of the Continent, particularly in France, where it reigns as a malignant

epidemic, especially in the Hôtel Dieu, and Foundling Hospitals, and is known by the names of Muguet and Millet.* The thrush, however, is as much a disease as any other complaint that appears in the month, and is connected with most of those already described; a proper attention to which may very frequently prevent it.

Exudations upon the mucous membrane of the mouth are of two distinct characters—either white, being made up of the crusts of aphthous ulcerations (of the muciparous follicles of the mucous membrane of the mouth) or consisting of a secretion having the appearance of milk or curd, the result of a particular form of inflammation.

Infants are obnoxious to a specific inflammation of the mucous membrane, which may be confined to the mouth only, or may affect the whole length of the alimentary canal. Aphthæ do not generally extend beyond the cardia; but the secretion from the mucous surface becomes morbidly increased and is extremely irritating, producing great soreness, redness, and sometimes excoriation about the anus.

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, which some writers have termed ulcers. 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,

* It has been already remarked, that several hospital diseases in France are more complex than with us, and possibly from their infirmaries receiving a much greater number of patients than ours, and their apartments and beds being consequently less clean, as well as the air foul, and disposed to multiply contagion.

This is remarkably the case in regard to the diseases of infants, whose temperament is a singular union of debility and spasm, which the French have aptly termed *Laxité vibratile*.

The Muguet is a striking instance of the above-mentioned tendency, it being altogether an hospital disease, which, though distinguished by this name, appears to be a malignant thrush, and is frequently attended with a species of the infantile erysipelas.† When so accompanied, it is said to be constantly fatal, unless the hard and tumid parts terminate in benign abscesses, and suppurate kindly; which is rarely the case, they being more commonly found to mortify.

† See Mémoires de la Société Royal de Médecine, anno 1779.

from the lips even to the œsophagus, and is said to extend into the stomach, and through the whole length of the intestines; producing also a redness about the anus. When the crust falls off, it is frequently succeeded by others of a darker colour; but this is true 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 several weeks. I have seen this so very often the case, that when I observe a child to have the complaint very slightly, and that it does not increase after two or three days, I venture to pronounce it likely to continue a long time, but that it will be of no consequence. I have, likewise, seen a return of thrush in a child three months old, and the infant no wise ill or costive. Care, however, ought always to be taken that children, with any degree of this complaint, be not exposed to cold. It is an old observation, and there is some foundation for it, that unusually long sleeping in the course of the first week or two, is often a forerunner of this complaint.

The thrush, in its commencement, is said to be generally attended with fever; but I have, by no means, found this to be the case, where the thrush is an original disease. When consequent on severe bowel complaints, erysipelas, and other infantile disorders, it is, indeed, often accompanied with fever; and when so, proves either favourably critical, or the infant usually sinks very soon. In ordinary cases, however, I am confident in nine out of ten, there is not the least fever, though the mouth is often so much heated as to excoriate the nipples of the nurse, and so tender, that the child is often observed to suck with reluctance and caution. A very red and shiny appearance of the tongue frequently precedes the occurrence of the thrush; in these cases, a febrile state of the system is generally evident. In very bad kinds of thrush, a fever may attend; but even here, it does not appear at the commencement of the complaint, but rather towards the close, the fever being also of the low kind. And this is owing to the general ill health induced by the morbid state of the gastric juices and alimentary canal, in the same manner as the common hectic fever is induced by the long continuance of other bowel complaints.

It has long been a received opinion, that the thrush must appear at the anus, and many people will not admit that it is cured, if it does not; and for the like reason, they always suppose it to be going off when this redness takes place. But the truth is, that its appearance there is only a mark of the degree of the disease, or of the acidity that occasions it, and not in the least of its cure; and is not, therefore, generally to be wished for. The redness about this part is occasioned by the sharpness of the secretions in the bowels, and consequently of the stools, which slightly inflame, and sometimes excoriate the parts about the anus, and, in a bad thrush, will do so long before the complaint is going off; but in the lighter kind, no such effects are produced, or are, at least, very slight. And, indeed, this redness has so often been mentioned to me as an indication that infants must, unobserved, have already had a slight thrush, or, according to others, be likely to suffer from it very soon, where children have, nevertheless, escaped it altogether, that I have ventured to imagine such infants may be least of all liable to it, if otherwise in good health, at least, my experience seems to support the idea. And I have even conceived, that the acidity of the first passages, being in some children more confined, may prove a remote cause of such infants being troubled with the thrush; whilst others, by an open belly, and stronger viscera, may escape it, at the expense only of the soreness of the external parts, which often continues for several days. And this has led some people, on the other hand, to call this simple redness the thrush, and we therefore often hear it said that children have had it only in this part.

A principal remote cause of this disease seems to be indigestion, whether occasioned by bad milk, or other unwholesome food, or by the weakness of the stomach. Perhaps thick victuals, particularly if taken hot, and made very sweet; also covering the face of the child when it sleeps, or allowing it to breathe the confined air of the mother's bed, may contribute to bring on the complaint, and ought therefore to be avoided. The proximate cause is the thickness, or acrimony of the juices secreted from the glands of the mouth, fauces, stomach, &c. producing heat and soreness in these parts. A tea-spoonful

of cold water given every morning has been thought a good prophylactic: but keeping the bowels duly open, is certainly a much better. Cold water night and morning is also a good aperient with some.

The means of cure must be sufficiently obvious, if due attention be paid to the nature and occasion of the complaint. As a general observation, it may be said, that when the thrush attacks infants of a robust habit of body, it is easily cured, and, indeed, requires nothing more than keeping the bowels well open; for which purpose, the daily exhibition of castor oil is usually the fittest means. But, on the other hand, the complaint is attended with some hazard in delicate infants, whose bowels have been previously weak, and especially where the child is nourished only by the spoon. Much has been said in favour of emetics, especially oil of antimony, as being almost a specific for the disease, but I cannot say it has proved so with me,—unless in the slight cases just mentioned; nor can I see any sufficient cause for departing from the more ancient practice, in the treatment of this very common complaint.

There can be no objection, after having properly opened the bowels, to administer an emetic, and where the thrush is of a dark colour, and the whole inside of the cheeks is lined with it, I am persuaded it may be useful, by emptying the stomach of the crude juices oozing into it from the glands of this part. Should the *vinum antimonii*, indeed, be found useful, not merely as an emetic or purgative, but by any alterative virtues capable of removing certain morbid actions of the glands seated in the first passages, a recourse to it would certainly be rational; but I have myself had no evidence of such virtues.

Where there is no fever, nor any uncommon symptom, testaceous powders are the best and safest remedy; which may be joined with a little magnesia, if the body be costive, administered twice or oftener in the day; or if in the other extreme, and the child is very weakly, three or four grains of the compound powder of contrayerva in its stead. Some such preparation should be administered for three or four days succes-

sively, and afterwards something more or less purgative, to carry down the scales as they fall off from the parts. For this purpose rhubarb is generally the best; but when the thrush is very violent, is of a dark colour, has come on very rapidly, and the child is lusty and strong, a grain or two of the *pulv. è scammon. cum calomel.* may be joined with it, agreeably to the idea of Heister, and the testaceous powders be repeated for two or three days as before, till the disorder begins to give way. On the other hand, when an infant with this bad thrush is weak and delicate, a decoction of the Peruvian, or oak bark, with aromatic confection, is found the best remedy.

The choice of the testaceous powders, on which some writers have said so much, is, I believe, of very little importance: the purest and softest are preferable. The design of these medicines being to absorb and correct the predominant acidity,* their effect will be discovered from the kind of stools that succeed, and the dose may therefore be increased or diminished, or they may be altogether discontinued, as circumstances direct. In the mean time, if the child be suckled, the nurse's diet should be attended to; and, in general, her usual quantity of porter or ale (which is almost always more than sufficient) should be diminished.

In regard to applications to the part, it is necessary to observe, that as they have little to do in curing the complaint, it will be improper to have recourse to them very early. I know, indeed, it is very common to begin with them, but they serve only to increase the soreness of the parts, (especially in the manner they are generally used,) and to give a deceitful appearance of amendment. The proper intention of these remedies, at this period, is merely to preserve the infant's mouth clean and comfortable, and to prevent, as much as may

* The French physicians are of opinion that the thrush is owing to what they call a putrid alkaline humour, or something analogous thereto, rather than to an acid. But this cannot be the case in the ordinary thrush, as is manifest both from the appearance, and the sour smell of the stools, as well as from the more certain remedies for the complaint, which are alkalies and absorbents. The malignant thrush, (already hinted at,) which appears in some of their crowded hospitals, is certainly a very different complaint, and seems, indeed, to be of a putrid nature.

be, any pain or injury to the wet-nurse. If, therefore, the tongue and the inside of the cheeks are thickly covered with sloughs, it may be convenient to clean the mouth two or three times a day; but otherwise it will in general be improper till the complaint is past the height, the sloughs disposed to fall off, and the parts underneath inclined to heal; which never takes place till the secretions in the first passages are become bland and mild. Proper applications will then have their use, not only by keeping the mouth clean, but by constricting and healing the raw and tender apertures of the excretory vessels.

I have, indeed, met with an instance of a very copious thrush disappearing, after cleaning the mouth with borax and honey, at noon and night, on the fourth day of the disease. Until this time it had been increasing, and I expected would become worse; and I therefore directed the mouth to be cleaned so early, only to render the infant comfortable, and to prevent, as much as might be, any inconvenience to the wet-nurse. There was but very little appearance of thrush, however, the next morning, and not the least after that day. It is, therefore, likely that the parts were rendered perfectly clean by the help of the borax, somewhat sooner than they otherwise would have been; though I can by no means conclude that it had any other share in the cure.

The like observations I have had occasion to make, in regard to an exceeding slight appearance of thrush, which had continued in the same state for three days; but upon being cleared off by once using the borax and honey, never re-appeared. In both cases, the usual internal remedies were administered, both before and after the recourse to topicals.

Of the latter of these, also, a variety have been in use, in the form of lotions and gargles, which from the earliest times have all been of an astringent nature; and, it scarce needs be added, should be of an innoxious kind, as some portion of them will be swallowed: and I mention this because Stoll reports that the English advise a solution of *sacch. saturni*, which, for my own part, I never heard of before. Honey of roses and spirit of vitriol, or sea salt, as recommended by Ettmuller and Dr.

Shaw, form a very good application ; but nothing is preferable to borax, which some advise to be mixed up with sugar, in the proportion of one part of the former to seven of the latter : a pinch of this put upon the child's tongue, will be licked to all parts of the mouth. But I prefer a mixture of borax and common honey, (two scruples, a dram, or even more of the former, to an ounce of the latter,) which hangs about the fauces better than in the form of powder, and which the infant smears about of itself. This is far preferable to rubbing its mouth. Either of these may, at this period, be made use of as often as shall be necessary to keep the parts clean, which they will effectually do, without putting the infant to pain, by being forcibly rubbed on.

It only remains to take notice of the black thrush, as it is called, which is, confessedly, a very uncommon complaint in the infant state. The late Dr. Armstrong said he had never met with it among the great number of children brought to his dispensary. I have seen only two instances of it, which were in strong and healthy children ; but the parts were not perfectly black, and if that be intended by the name, these cases might not be precisely that complaint ; they, however, both proved fatal. After the stomach and bowels have been cleansed, I believe the *decoct. cinchon.* and *confec. aromat.* as before mentioned, with the addition of tincture of snake-root, is the most likely medicine to be of service. The bark, especially, should be administered very freely, and the bowels be kept open ; which is more safely done by rhubarb, than any other purge.

APHTHA GANGRENOSA.

The Aphtha Infantum has been generally regarded as an idiopathic disease ; but I believe that every other species of aphtha has been considered either as purely symptomatic of fever, dysentery, &c., or as a critical termination of some acute disorder. The apthous affection which I am now going to describe, does not, however, seem to be the consequence of any preceding general disease ; and I am inclined to think,

that it is the cause, rather than the effect, of those febrile symptoms, which accompany what I shall call by the name of *aphtha gangrenosa*.

This disease most commonly attacks children that are above two years of age, and, I believe, rarely after nine, unless by infection. Its first appearance is marked by a very spongy state of the gums, and a remarkable tenderness of the inside of the cheeks and mouth. Soon after this, little aphthous sores having a dark coloured surface, appear upon the gums, the inside of the lips, and upon the tongue: sometimes similar ulcers are seen upon the uvula and tonsils; but this is not always the case. As the disease proceeds, the cheeks become slightly tumefied, and are very tender when touched; and there is often an unusual redness upon that portion of the skin which covers the lower jaw. Besides the aphthæ which appear upon the tongue, that part is usually much furred, and the teeth about the edges of the gums are likewise covered with a blackish fur; the breath is very offensive, and, at this period, the disease is highly infectious, even to adults. In the progress of this complaint, the submaxillary glands become enlarged, and slightly painful; and there is generally a preternatural flux of saliva, which is sometimes discharged in considerable quantities from the very beginning of the attack. Sometimes the angles of the mouth are found to be ulcerated, but this is by no means a common appearance.

The gangrenous thrush is always accompanied with considerable languor, and sense of debility; an increase of heat; a small, quick pulse; the appetite is impaired; but the children do not sleep ill, and they are often cheerful and active, at different parts of the day.

The disease does not observe any exact periods; some children recovering in a fortnight, while others have been more or less affected from a month to six weeks.

Formidable as the appearance of this disease may be, it is not found to be dangerous, and the remedies are obvious. The *infus. cort. cascarillæ*, warmed with *tinct. cort. Peruv. comp.* should be exhibited three or four times a day, in doses suited to the age; and the parts frequently washed with the

decoct. cort. Peruv. rendered as sharp with the *acid. vitr. dilut.* as children can bear it.

We have found the solution of nitrate of silver, \mathfrak{ss} . to the \mathfrak{ij} . of water, applied with a hair pencil, a most useful remedy. Dr. James Hewart, in the Appendix to Billard, extols a solution of sulphate of copper, in the proportion of \mathfrak{zss} . to \mathfrak{ij} .

ERUPTIONS ON THE SKIN.

It is by no means my intention to enter largely into this extensive subject, imperfectly understood, even to this day, at least in regard to classification and arrangement; though certainly our knowledge of eruptive diseases has been much improved through the pains taken by Dr. Willan, and, in respect to children, what we know is sufficient for every practical use. In another part of the work I shall treat of the scald-head, and two or three other troublesome affections of the skin, taking place at different ages; but shall at present chiefly confine myself to eruptions peculiar to infancy; adverting first to such as are connected with the state of the first passages.* The earliest of these is—

THE STROPHULUS, OR RED-GUM.

(*Strophulus Intertinctus.* Willan.)

This eruption has been distinguished by different terms: I speak here of the *strophulus intertinctus*, which is an efflorescence appearing usually in small spots, often confined to the face and neck; but sometimes extending to the hands and

* The description of "the eruptions peculiar to infancy," which Dr. Underwood has given, is far from being clear and explicit. It is indeed a most difficult task, even with the aid of drawings or coloured engravings, to give such exact definitions of the manifold eruptions on the skin, as shall enable practitioners easily to distinguish some from others. Since Dr. Willan's publication on cutaneous diseases, a more exact knowledge of several of these complaints has been obtained, but much remains to be done to accomplish a perfect classification.

To some of Dr. Underwood's appellations, I have added the name by which the disease is characterised in Willan's and Bateman's arrangement: but on some occasions I have not been able to satisfy myself, that my appropriation of the name to the disease intended to be described, is quite correct. Whenever I have doubted much I have marked my doubt by a note of interrogation.—S. M.

legs, and even the whole body, appearing in very large patches raised above the surface. Eruptions will likewise appear in the form of small pustules, which are filled with a limpid, or sometimes a purulent, or yellow liquor, and frequently turn dry and horny, and scale off; at least I have never known what name to give this kind of eruption, but that of a *ranker* strophulus, as it happens only in the month, or soon afterwards, and never gives any trouble. This seems to be that termed by some writers strophulus confertus. There is another species as small as pins' heads, or even their points; firmer than the former; often of a pearl colour, and opaque, which has generally been accounted a kind of red-gum: but it has of late, for distinction's sake, been termed the strophulus albidus, or the *white-gum*,* as the former might be called strophulus subalbus.—Another species appears in small, circular patches, and is denominated strophulus volaticus; and a fifth, in which the patches are larger than in any of the foregoing, and are more diffused, appearing chiefly on the loins, shoulders, and the upper part of the arms. Every species of this eruption, like the thrush, is the effect of a predominant acid, but can scarcely be termed a complaint, being a kindly exertion of nature to throw off some acrimony; consequently an evidence of the strength of the constitution, as the thrush is, usually, of its weakness. In the former, nature throws off the offending matter on the surface more completely, as well as on less irritable parts, than in the latter, and therefore, when the eruption is slight, requires no assistance. On this account it is, I apprehend, that writers have not usually taken notice of it; though it should seem requisite, both on account of the various appearances of it, and especially of one species, more rank and extensive than the rest. In general, it is necessary only to give a little testaceous powder, or magnesia, according to the state of the bowels, and to keep the child moderately warm; otherwise, the rash striking in, the acrimony will fall on the first passages, and be succeeded by sickness, or purging, (till the eruption appears again on the skin,) or not unfrequently by the thrush. In the case of sickness at the stomach, or any disposition to fits, upon this erup-

* It is to this complaint that Vogelius seems to give the name of *achores*, but the old writers differ in this respect.

tion being repelled, some light cordial, such as a few drops of the *sprit. ammoniæ comp.* should be given two or three times a day, and the child's feet, or perhaps the whole body, be put into warm water, and a blister be applied between the shoulders, if any untoward symptoms should continue. The state of the skin and the bowels have a peculiar sympathy, and on this account, infants whose first passages have been frequently disordered, are always benefited by eruptions on the skin: and, in such, peculiar care is necessary to guard against their being repelled, as well as to invite their return.

Dr. Hamilton speaks of copper-coloured blotches of the size of a sixpence, or shilling-piece, on the nates or soles of the feet, occurring in the first or second week after birth, indicating a diseased state of the infant's habit, (*ecthyma cachecticum* of Willan?) and requiring the most serious attention. He adds that, if neglected, ulcerations of the palate, throat, and nostrils, follow; the nurse's nipples, arm-pits, and throat become infected: and if the infant survive for any length of time, (which is not common,) the arms and legs are covered with an ugly scab, which keeps up a constant degree of irritation. He informs us, that the only cure for this affection is mercury, which ought to be exhibited both to the nurse, in such doses as shall affect her milk, and also to the infant, in doses adapted to its strength, and to the virulence of the disease. Dr. Hamilton does not intimate a suspicion, that the blotches here spoken of originate from a syphilitic affection. Many of the French writers on children's diseases, however, viz. Alphonse le Roy, Mahon, Combes Brassard, Capuron, &c. seem to consider the symptoms mentioned by Dr. Hamilton as conclusive evidence of such an origin. The popular opinion in London leans the same way. During eight years that I was the physician accoucheur to the Westminster General Dispensary, many cases of this nature fell under my care; I have seen several, likewise, at the Middlesex Hospital in private practice; and in almost every instance the parents or friends were full of suspicion that this was the origin of the disease; and often an admission has been made that one or other of the parents had been deeply imbued with the venereal disease. I do not recollect that any case was cured, unless mercury was exhibited in

some form or other; frequently I have given very small doses of the oxymuriate with syrup of sarsaparilla, but more commonly small doses of calomel or hydrarg. c. cretâ. Unless the mother had evident symptoms of the disease, I have not usually put her under the influence of the specific.—S. M.

I have myself never seen this eruption, but the statement comes from such authority, I thought it ought not to pass unnoticed.

Infants are peculiarly liable to various anomalous kinds of rash, both in the month, and till the period of teething is over. The early ones may be regarded as a sort of red-gum, and children who are most subject to them generally have their bowels in a better state; the rash seemingly carrying off, as has been said, the acidity* with which they so much abound.

It may be remarked however, that when infants at the breast are inclined to frequent returns of some eruption, if the child be always indisposed at such seasons, the rash will often be found owing to some ill quality in the breast-milk, which ought, therefore, to be examined, and particularly in regard to its taste. On such occasions I have found, that milk, which has been above a twelvemonth old, has contracted a very unpleasant flavour; and that, upon changing the wet-nurse, a very ill-looking rash has immediately abated, and has soon afterwards entirely disappeared, together with the other complaints.

I am glad to find Mr. Burns, of Glasgow, of this opinion, whose treatise on midwifery, and the diseases of women and children, I had not seen at the time of the former edition of this work; and I feel gratified by the polite notice of so respectable a writer, whose work is highly worthy of perusal by the younger part of the profession, as containing the sentiments of various ancient and modern writers.

[The two worst cases we have met with of these copper-coloured blotches (which we consider as cachexia syphiloides) occurred in the higher walks of life. In one there was no evidence of primary syphilis having occurred, but the parents, though both robust in frame, were neither of them, strictly speaking, of healthy temperament: the father was prone to

* See Harris, pp. 22, 23.

sore throat. The late Sir Patrick Macgregor (whose patient the father had been for years) said he had known nearly six weeks to have elapsed after the birth of the infant before the eruption appeared.

In the second case the parents were neither of them of good constitution, and the father was subject to sore throat; but there was no evidence of syphilis. The eruption appeared a few days after the infant's birth, and was most severe; it pervaded besides the nates, the margin of the nails, both of the toes and fingers, many of which came off. These parts were most benefited by the black wash. The infants had both healthy wet-nurses—alterative doses of the *hydrargyrum cum cretâ* were given for some time, and they both did well.—H. D.]

CRUSTA-LACTEA, OR LACTUMEN.

(*Porrigo Larvalis.* Willan.)

This, it is well known, calls for a little more attention, and has oftentimes a very unpleasant appearance; but is, notwithstanding, equally innocent with the former, and even prevents other complaints. I think I never saw an infant much loaded with it, but it has always been healthy, and cut its teeth remarkably well. Indeed, it falls to the lot of the finest children, and such as are well nourished; whence some have imagined it owing only to the richness of the milk.* And it is remarkable in this eruption, that howsoever thick and long-continued the scabs may be, the crusta-lactea never excoriates, nor leaves any scar on the parts. It may, possibly, be different in some other climates, though I cannot guess for what reason it should be so on the continent: it is insisted upon, however, by Dr. Charles Strack, as well as that healthy children long affected with it become unhealthy. He recommends the *viola tricolor*, Linn. of which a handful of the fresh, or half a dram of the dried leaves, is directed to be boiled in a half-pint of cow's milk, and strained off. This quantity of the decoction is to be taken night and morning.

The crusta-lactea appears first on the forehead, and some-

* See Astruc.

times on the scalp, and often extends half-way over the face in the form of large, loose scabs, which, as the disorder increases, appear not very unlike the smallpox, after they are turned. It begins with white vesicles, larger than the itch, which soon become of a dark colour; to which succeed the scabs, with efflux of ichor, and great itching of the affected parts, sometimes covering the head, and, as some say, but I believe improperly, the whole body. It is also said to degenerate into the scald-head;* but I have never seen anything like the true tinea in young infants. It is sometimes confounded with the *crusta serpiginosa*, which is a much more obstinate complaint.

Very little, I believe, is necessary to be done; but in bad cases a blister is sometimes of service; and, further, usually answers the grand purpose of abating the itching, which, in some instances, is exceedingly great: for this end, however, the repetition of a blister, if needful, is preferable to keeping one constantly open. Washing the parts, also, with the anile remedy of butter and beer, is sometimes useful, especially when the discharge is hot and acrid. To the like end the *ung. picis*, (made with the petroleum, instead of *pix liquida*,) spread thinly on a piece of linen, and applied after the infant has got into its night's sleep, is equally safe; but should be carefully washed off the next morning. If the urine becomes turbid, or fetid, it is thought the rash will be of short duration. At any rate, it usually disappears of itself when the child has cut three or four teeth, though it may sometimes continue for several months, and, in a very few instances, even for years; in such cases, the Harrowgate, or any other sulphureous water, will have a good effect; but the shop medicines commonly prescribed do nothing. I have known testaceous powders, calomel, and other alteratives, administered to no purpose, as people of rank are very anxious to have it removed, if it be possible. This rash will now and then make its appearance very early, and has then been mistaken, by those who are not much accustomed to attend very young children, for the effects

* *Tractatus de Morbis Puerorum.* Amstelodami, 1760.—*Anonymous.*

of the venereal disease. Though it more usually dies off upon cutting some teeth, yet I have known it disappear suddenly, previously to any teeth being cut, and after some weeks return more violently than before, infants remaining all the while in perfect health. [Though the crusta-lactea is generally unattended with danger, or ill consequences, yet the state of itching or irritation it produces is sometimes excessively distressing to the child; and I have known many instances of so much sallowness, emaciation, and other evidences of want of health, as to occasion much alarm. Except when such ill symptoms occur, little of internal medicine is required; yet it is desirable to keep the bowels always regular, perhaps rather active; sometimes a mild mercurial alterative has been serviceable, and sometimes I have given with benefit a little draught, twice or thrice a day, with *liq. ammon. acet.* ʒi.; *liq. antim. tart. m. v. ad x.* Where sallowness, languor, and emaciation have come on, the carbonate of soda, with sarsaparilla, *decoct. lichenis*, or some light bitter, has been employed with advantage. S. M.]

[The ferrum tartarizatum, or the vinum ferri, may be given to delicate children. For external applications lotions are generally preferable to ointments, as ʒj. of dilute hydrocyanic acid to ℥ss. of rose water; or ʒss. of sulphate of zinc to ℥ss. of water; or warm water, with a small portion of spirit; warm Harrowgate water; or a warm decoction of poppy heads, with the addition of ʒss. of *liquor ammon. acetatis* to ℥ss. of the decoction will be found soothing. Where the eschars are dry, the application of calomel, or zinc ointment, will allay the itching, and facilitate the desquamation. The child will be benefited by a tepid bath every night of decoction of bran, *strained carefully*. The hands should be muffled on going to bed, and an anodyne given, if the patient be restless.—H. D.]

It were almost endless to enumerate the various kinds of rash to which infants are liable, but I mean chiefly to confine my remarks to the more important, or rare ones, and such as may not have been described by preceding writers. Among such are the following, whose unusual appearance is apt to perplex such as are not accustomed to see them.

TOOTH-RASHES.

The first I shall notice is somewhat anomalous, being, like the former, not confined to dentition. It appears, indeed, in connexion with different maladies; particularly at the decline of fevers, and severe bowel complaints; insomuch that upon a sudden appearance of it during a serious illness, I have often ventured to prognosticate the recovery. This rash very much resembles the itch, both in regard to the little watery heads, and foul blotches,* and is confined to no particular part of the body, though it appears more frequently about the face and neck. Indeed, I have seen the whole body so covered with it, (mixed with an eruption about the face, of a different appearance, and evidently red-gum,) that, in a consultation, it has been by some taken to be the true itch. This eruption is certainly salutary, and even critical, requires nothing but to avoid taking cold, and is mentioned only because it is uncommon, and has alarmed such as are not acquainted with it.

I have two or three times, during dentition, noticed a rash that has so exactly resembled flea-bites, having even a depressed point in the middle of the elevated spot, that I could not be persuaded by the nurse's account, that it had not been occasioned by the sting of some such insect, until I had made repeated observations, and found it recurring uniformly a little before a tooth has been cut.†

Another, a very common rash, appears chiefly in teething children, which very much resembles the measles, and has been sometimes mistaken for it.‡ It is preceded by sickness at the stomach, but is attended with very little fever; though the rash continues very florid for three days, like the measles, but does not dry off in the manner of that disease. It requires nothing more than the testaceous powders, or sometimes the addition of a little nitre, and compound powder of contrayerva;

* (*Miliaria*, Bateman.)

+ (*Lichen Urticatus*, Bateman.)

‡ (*Roseola Infantilis*, Willan.)

with a dose or two of rhubarb, or other gentle laxative, on the going off of the rash.

At this period, especially while the double or eye-teeth are cutting, I have noticed a rash which at its first appearance is very similar to the above, and has likewise been mistaken for the measles. It soon spreads, however, into larger spots and patches of a bright red, and afterwards of a darker hue, resembling the ill-looking petechiæ which appear in bad fevers; it is, nevertheless, of a benign nature. This rash is, indeed, attended with some fever, arising possibly from the irritation occasioned by teething, and has been followed by small and hard round tumours on the legs, which softening in two or three days, always appear as if they would suppurate, though I believe they never do,* as will be further noticed, respecting a similar appearance of boils, under the head of fever. The treatment, like that of other rashes at this period, is very simple, requiring little more than an attention to the state of the bowels, or perhaps, a few grains of the compound powder of contrayerva, unless the fever be considerable, in which case the treatment must be the same as that directed under the different heads of fever and dentition. Should the lumps succeeding this rash not begin to die away in three or four days, a decoction of the bark will be found useful when the fever of dentition may not forbid recourse to it.

I have seen a third kind of rash, in appearance resembling the measles, and, like it, covering the whole body, but with larger intermediate patches, like the eruption in the scarlet fever,† which is mentioned more for its uncommonness, which might cause alarm, than for its being at all dangerous, or important. It was, however, in every instance, preceded by sickness, purging, pain, and a little fever; the whole subsiding upon the appearance of the rash, which therefore seemed to be critical, or, at least, like some other eruptions, consecutive on convalescence.

Some infants never cut a tooth without its being preceded

* (*Erythema Nodosum*. Willan.) Both Willan and Bateman speak of this complaint as affecting females only. I have no doubt of having frequently witnessed it in children of both sexes.—S. M.

† (*Urticaria Febrilis*. Willan.)

by a rash, and sometimes by a very singular one,* the eruption appearing in every part of the body; in some parts consisting of hard elevated pimples as large as peas, and in others, of red patches on the fingers, the arms, and about the shoulders and back, as broad as a shilling: but in no case have these eruptions required any particular attention; on the contrary they have seemed to prevent the more ordinary complaints of teething.

An eruption still less frequently met with than most of the above, appears after children have cut their first teeth. I know not what name ought to be given to this kind of eruption, which breaks out in the form of round lumps, as large as middle-sized peas, very hard, with a very red base, and white at the top, as if they contained a little lymph.†

They come out suddenly, without previous sickness at the stomach, are neither sore, nor disposed to itch, and never give any trouble; they are seldom seen but on parts that are usually uncovered, and are sometimes there in great numbers, resembling the distinct small-pox; but are harder, more inflamed, and less purulent.

Alarming, as well as unusual, as this appearance may be, I believe the eruption is always perfectly innocuous, if not repelled by cold, or improper treatment, and will dry away in three or four days; nothing more being necessary than the little remedies directed for the former, and to keep the child within doors, if the weather be cold.

There are, however, tumours of the size and hardness described above, and with a red base, which, after continuing many weeks without occasioning either itching or pain, will suddenly inflame at the superior part, and break, though without sensible pain.‡ These tumours take place in children who have all their first teeth, or nearly so, and who appear in good health, save that they are rather feeble, and possibly of a scrofulous habit. They are slow in healing, and call for a nutritious diet, and the use of a little red wine and bark.

* (*Urticaria Febrilis*. Willan.)

† (*Ecthyma Infantile*. Bateman.)

‡ (*Ecthyma Vulgare*. Bateman.)

An eruption of an appearance equally uncommon, and analogous to the above,* I have met with only in children of at least three or four years of age, and such as have also been affected with slight symptoms of scrofula, though I have not seen it frequently enough to ascertain its being, in any degree, owing to that specific virus. It breaks out suddenly, covering at once the greater part of the body, but occasioning neither pain nor itching; nor are children sick at the stomach, or otherwise ill with it, though it lasts for two or three weeks.

This eruption, therefore, like some others, is taken notice of chiefly for its singular appearance; which, though somewhat like the nettle-rash, is of a different figure, and may be pretty exactly conceived of by the little red lumps left sometimes by the small-pox, after they are turned, and also rubbed, or picked off, especially after the crystalline, or warty species, and where the pustules have been pretty numerous. If the first passages are at all disturbed, my attention is principally directed to them, otherwise to the state of the skin; and in this case I have usually directed small doses of the *pulv. antimonial.* to be taken for a few nights at going to bed, and the polychrest salt and rhubarb, occasionally in the course of the day, with or without the addition of the *liquor ammoniæ acetatis.* In the course of a few days the eruption puts on a darker colour, is less prominent, and begins to scale off in a branny scurf, somewhat like the measles; but should no such change take place, the *vinum antimonii*, or the *hydrargyr. cum cretâ* should be taken two or three times a day; to which, if no amendment should soon be perceived, a few drops of the *tinctura cantharidis* may be added: a remedy often very efficacious in disorders of the skin, but requiring to be administered with caution.

ESSERA, OR NETTLE-RASH.

(*Urticaria. Willan.*)

An eruption, with every appearance of the nettle-rash, sometimes occurs in children, and more generally in those under two

* (*Ecthyma Luridum* ? Bateman.)

years of age, and is exceedingly troublesome to the infant, as well as matter of surprise to those about it, from the suddenness of its appearance. Children going to bed perfectly well awake very uneasy, and frequently continue screaming for some time, before the cause is discovered; when, upon examining the body, and the lower limbs, they are found covered with large wheals, resembling those arising from the sting of nettles.

The *essera*, or *urticaria*, in athletic youths and adults, is attended with slight fever; its accession is sometimes preceded by rigor, sickness at the stomach, and pains in the head, especially when the sudden consequence of exposure to a very cold wind; but it is never dangerous, and demands particular notice only when it may happen to continue a very long time. The nettle-rash of infants is of still less importance; and the species now under consideration requires less than any other, and, indeed, often disappears in a few hours. When it continues longer, a few grains of the *pulv. contrayervæ comp.* or other of the milder absorbent powders, with or without a few drops of the *spirit. ammoniæ comp.* may be given two or three times a day, and the bowels kept open.

When the body is more covered with the rash, and it continues long, a little more care is required to prevent its being repelled; and if it should be so, the tepid bath and light cordials, as before mentioned, should be had recourse to, in order to procure its return to the surface, which is always of the greatest consequence if the child should continue unwell.

In athletic youths the nettle-rash is sometimes attended with the usual symptoms of fever, during which the patient should be confined to bed. It will also, in some instances, become chronical, and is then not always easy of cure. The following has, in such cases, been found useful.

R.—Hydrarg. sulphuret. rubri, ʒss.

Radic. serpentar. virg. pulv., ʒj.

Syrupi simpl. q. s. ut fiat bolus, bis die sumendus; superbibendo haust. infusi flor. sambuci.

Among rashes attended with some little fever, there are various anomalies, and one resembling both the above, and the febris scarlatina, but without the marked symptoms of the latter, or drying off in branny scales, in the usual manner of that eruption. The form and colour of the rash, and degree of fever, however, are more of that kind than of the nettle-rash.

PHLYCTÆNÆ.

(*Pemphigus infantilis*. Willan.)

Another rash, or rather eruption, takes place both in bowel complaints and in teething; and I have seen it in new-born infants, resembling the pemphigus of adults, yet rather seeming to be what the old writers have termed phlyctænæ, or phlyctides; and it always appears to be beneficial. It consists of vesications, or blisters, of different sizes, resembling little scalds or burns, and continues for several days. They come out in different parts, but chiefly on the belly, ribs, and thighs: and contain a sharp lymph, which it may be prudent to let out by a puncture with a needle, especially from the larger ones. No medicine is necessary but such as the particular state of the bowels may call for, acidity usually abounding whenever there is much eruption on the skin.

An eruption, vulgarly termed scorbutic,* infesting the face and neck, sometimes also the nates and thighs, and even about the finger-nails, and discharging a sharp ichor that excoriates wherever it runs, will often yield in a short time to the expressed juice of the *Sium aquaticum*. From one to four or five table-spoonfuls may be given, mixed with one or more spoonfuls of new milk, three times a day, according to the child's age, and the state of its stomach; taking care, at the same time, to keep the bowels open by senna tea, or other common laxative. Should this fail, or not be procurable at some seasons, the *hydrarg. cum cretâ* may be administered two or three times a day. In some instances, however, and especially in children of a costive habit, purging has

* (*Herpes Phlyctænodes?* Bateman.)

done more than any thing; in teething children, indeed, the eruption will recur many times, until all the first teeth are cut. To allay the intolerable itching, the application of the *unguent picis*, prepared as recommended for the *crusta lactea*, and spread upon linen, is frequently efficacious, and has no tendency to repel.

[An alkaline tepid bath every night, in the proportion of ℥j. of carbonate of soda, or potash, to a gallon of water, or of infusion of bran, with some mild alterative aperient, as

R.—Sodæ sesquicarbon. pulv. rhei. a. ℥j.

Syr. aurantii, ℥ii.

Aq. menth. pip. ad. ℥ij,

Fiat. mist. cujus sumat cochl. j. medium aut magn. omni nocte will be found an appropriate treatment.

Where the child has become enfeebled, some mild chalybeate, as the *ferrum tartar*, or *vin. ferri*, will be useful.—H.D.]

PSORA, OR THE GROCER'S ITCH.

(*Psoriasis Infantilis*. Willan.)

I have several times met with an eruption resembling the psora of the Greeks, or what is called amongst us the grocer's itch; whether depending at all upon the weather, it is difficult to say, but it is remarkable, that I have seen it chiefly during a cold season, and have then usually met with several children affected with it about the same time. It often begins about the arms and thighs, but always extends soon afterwards to other parts, and frequently spreads quite from the head to the feet. It appears in some parts in very small eruptions like the points of pins, with watery heads; and in other parts as large as peas, and sometimes in foul blotches; which, after breaking, form sores, and broad, ugly scabs. These die away, and the like appear, successively, in other parts, sometimes for two or three months, leaving the skin of a dirty, adust hue. In other parts, the eruption has the form of small, hardened pimples, which do not break, nor are at all sore to the touch.

This eruption occurs in children who have cut all their first teeth, as well as in infants at the breast, though more frequently in teething children, and it then seems to be connected with dentition. This appears evident from this fact, that children who had taken a variety of medicines, and continued to have the eruption break out in fresh places, have suddenly got rid of it altogether upon lancing the gums, and giving freedom to three or four teeth.

When this eruption has appeared in infants at the breast, I have several times known the suckling mother, or nurse, affected in a few weeks after with the same complaint: but whether by accidental coincidence, or from contagion, I was for a long time unable to ascertain; but I have now no doubt of its being contagious like the true itch: yet it does not appear to be communicable by a slight and more distant intercourse; a very useful discrimination in such a disease.

I was for a while much puzzled with this ill-looking eruption, the long continuance of which could not fail to be very distressing to the parents, who have sometimes suspected the eruption to be the itch, and at others venereal, which it certainly is not.

It has been always benefited for a while by washing the parts with two drams of the *aqua kali puri* in a pint of water, which I would always recommend, though it will not alone effect a cure. Various internal remedies, also, which remove other eruptions, have generally failed in this, such as the *hydrargyrum cum cretâ*, and *hydrargyrum cum sulphure*, given in large doses; as also the *Sium aquaticum*. The external application, however, of an ointment, consisting of the *unguentum sulphuris*, and *unguentum hydrargyri nitrati*, with a greater or less proportion of the latter, has hitherto never failed me, together with the internal exhibition of one or other of the forementioned remedies. In some of the more obstinate cutaneous affections, and particularly in this, I have noticed a spontaneous purging taking place upon the decline of the rash, and have always accounted it a good sign, having never observed the child to be weakened by the purging, though it has sometimes continued excessive for two or three weeks.

I shall close the account of eruptions with the description of one that is singular enough, resembling very much the herpes, or broad ring-worm, or the adust-coloured spots left on the face after an attack of St. Anthony's fire. I have seen it in various parts, but I think only on such as are more or less liable to be fretted by some part of the infant's dress, especially on the nates and contiguous parts covered by the clothes, where the blotches are always the broadest and most rank. Were it to appear nowhere else, it would seem to be occasioned by some sharpness of the urine and stools, as the skin has sometimes a very heated appearance, though the eruption, I believe, is not at all painful. It frequently breaks out before the period of teething, but the bowels are generally somewhat disordered, and the stools voided very green, or else become so very soon afterwards. This I take to be one of those eruptions occasioned by some bad quality of the breast milk: as, I think, I have never met with it but in young infants whose nurse's milk has been old, and has also contracted a very disagreeable taste. If that should not be the case, the rash will probably require nothing but the light absorbent medicines before mentioned, and to guard against constipation. But if these means should not succeed in a short time, the nurse ought to be changed, lest some worse consequence should ensue, as will be noticed under the head of convulsions.

In all the eruptive complaints of infants, exposure to cold ought to be carefully avoided, and great caution be used in regard to all external applications, as well as keeping the belly open. If the child is sick at the stomach, a little magnesia, or testaceous powder, with or without the addition of the *pulv. contrayervæ comp.* may be given now and then: or should the rash be hastily struck in, and the child be ill, the remedies before mentioned should be had recourse to; particularly bathings in warm salt and water, which, indeed, will expedite the cure in many eruptive complaints of the more permanent kind. The reader is reminded of this, from the great importance of attending to such retrocession; as I have known it, in a previously healthy child of only six months old, fol-

lowed, not only by vomitings and purgings, but by a rapid decline; and upon examining the body after death, the lungs have been found as replete with tubercles, as I have ever seen them at a more advanced age. Instances of so great marks of disease have, however, occurred to me only in families inclined to scrofulous, or hectic affections.

Should any scabs become very dry and hard, which the *crusta lactea*, for example, will sometimes be, especially when they extend to the crown of the head, and seem to give pain, they may be touched with a little cream, or with oil of almonds, mixed with a few drops of the *aqua kali*, but not a large surface at a time. Or should they be very moist, and cause pain by sticking to the cap, they may be dusted with a little common powder, or with the *flos sulphuris*, and covered with a singed rag; but I should be very cautious of doing much more with desiccative applications, for the reasons above mentioned, especially during the time of teething.

SORE EARS.

Slight blisters and ulcerations behind the ears of infants are very common, and in general require only to be washed with cold water, or covered with a singed rag, to keep the cap from sticking to them, and thereby giving the child pain. They are, moreover, very often beneficial, especially during bowel complaints, or the eruption of the teeth, and will sometimes get well and break out again into very foul sores, several times, without any cause of alarm. But in children of a gross habit of body, and especially about the time of teething, there is a species of ulcer that often requires attention, on account of its extending low down in the neck, occasioning great pain, and spreading into large and deep sores; insomuch that a gangrene has sometimes come on, and even the mastoid process has become carious. Here fomentations will be necessary, especially those of bark; the powder of which should also be administered internally. Such cases, however, do not very frequently occur; but whenever the sores are large and painful, fomenta-

tions of white poppy heads, boiled in milk, will be beneficial. If such ulcers are very foul, the treatment should be begun by a blister on the back, in order to draw off the heated serum that flows to the parts. Where the bark has not been indicated, I have usually given an opening dose of testaceous powder and rhubarb, with a little nutmeg, or sometimes nitre, to which is added either calomel, cinnabar of antimony, or *hydrargyrum cum sulphure*, the latter of which I think I have found more serviceable in some eruptive complaints in young children than seems to be imagined; but then it must be administered in much larger doses than it usually is. But, above all, if this species of ulcer be not soon disposed to heal after such treatment, some mercurial application should be made use of, which, though the sores are often apparently inflamed, never offends them. A very clean and elegant preparation of this kind is the following.

R.—Calomelanos. ʒj. ad ʒij.

Ung. sambuci ʒj. m. ft. linimentum.

A little of this liniment spread on each side of a piece of doubled linen cloth, and applied twice a day, will do more than all the fomentations, or healing ointments, that I have ever seen used; and, indeed, has always succeeded with me, though I have often been told that the sores had spread deeper from day to day under various other applications. From such treatment I have never found the least ill effects, but children have preserved their health as well as if the sores had kept open; which, when benign, are certainly designed by nature as a preservative from other complaints, especially those of the stomach and bowels, which are the next in order to be noticed.

VOMITUS, OR VOMITING.

I come now to the several disorders of the alimentary canal, and first of those the stomach.

Vomiting, considered as a disease, is certainly not a common complaint of infants, unless it be attendant upon some other malady, of which, indeed, it is, then, rather a symptom,

or the consequence of such disease improperly treated. Neither are infants in health disposed to vomit frequently, unless the stomach is overloaded; the milk is then usually ejected as soon as it is taken, and comes up unchanged. Nor is this to be considered as a disease, or as calling for the discipline recommended by some writers. Wherefore should the residue of the aliment be forced off the stomach by an emetic, when nature has already parted with all the oppressive abundance? This spontaneous puking is not attended with any violence to the stomach: the milk, or other food, comes up without any sensible action of the part, or the child being actually sick. Nay, it is so common to some of the finest children, that it is a saying with some experienced nurses, that a puking child is a thriving child; and when such ejection comes only soon after sucking or feeding, and the aliment is cast up scarcely changed, matter of fact verifies the observation.* I have even known clotted blood† thrown up, without any apparent effort, in an infant not two days old, and without the least ill effect. But if the food remains some time on the stomach, it will then be thrown up in a curdled state, which is an indication to attend to it if it happens frequently. Not that the milk ought not to curdle on the stomach, which it always must, in order to a due separation of its component parts, and which is the chief, if not the only digestion, it undergoes in the stomach. The whey and the rich oil are there separated from the curdy and earthy particles, the former being taken up by the lacteals,‡ is converted into blood; whilst the bulk of the latter is carried down and expelled with the other excrementitious parts of the food and gastric juices, for which nature has no longer any use. This curdling of the milk, therefore, is the natural course of diges-

* See *Primeros : De Morbis Infant.*

† It is not a very unusual thing for blood to be drawn by the child from the nipple of the mother, and the blood so received into the stomach is generally vomited up by the infant. Unless the clotted blood proceeded from such a source as this, it could hardly occur without injury to the child.—S. M.

‡ It is not intended in this place to speak with physiological accuracy, but in a mere reference to the first digestion: in the second, indeed, it is probable that some portion of every constituent part of our food may be further prepared to become nutritious.

tion, though many of the writers have not been sufficiently attentive to it, and Harris has asserted that it is owing to a predominant acid; implying that an undue acid is the only cause of the separation, which it certainly is not. It may, indeed, occasion it to take place too suddenly, or form too hard a curd, and give rise to various ill consequences, although such separation ought to be made, as the natural and proper effect of mixing duly with the gastric juice. When infants, therefore, not over-fed, throw up the milk uncurdled, after it has been some time in the stomach, it is always a worse sign: but when the milk comes up in a curdled state, it proves that the stomach having digested what it has received, has not power to push it forward into the bowels, and therefore throws up a part of it.* If this be the case, and the infant be not immediately relieved by it, the stomach may, perhaps, require to be emptied of its whole contents, which may then be easily done by giving a little warm water, or camomile tea. The cause of the indigestion was an accidental repletion: that removed, together with the consequent foulness, or bad juices of the stomach, the effect also will generally cease; and unless the vomiting returns, from any further injury the repletion may have occasioned, it requires nothing more. To distress the child, on every such occasion, with a sickening emetic, or drench it with rhubarb or magnesia, is as needless as it would be to awake a patient out of a sound sleep to give him an opiate. Only let the child fast a little after having emptied the stomach of its load, and the nurse be careful not to over-fill it for the future, and it will rarely want any other assistance.

If the vomiting, on the other hand, has arisen from acrid diet, a little further discipline may be requisite, because some half-digested food has got into the bowels, perhaps for several days together. In this case, a gentle laxative, and change of food for one of a milder kind, is all that is generally necessary;

* I have known children throw up a piece of curd full as large as the thumb of a grown person, and as firm as a piece of dough, and be perfectly well the next minute; though it might, doubtless, have done much injury if it had remained on the stomach.

or if there be a prevailing acidity in the stomach, either the testaceous powders, or magnesia, (according to the state of the bowels,) may be mixed with the food, or be otherwise administered for two or three days, as the occasion may require. Or a drop or two of the *aqua kali*, or a little Castile, or almond soap, are excellent remedies, especially when the stools are unusually green or clayey; not only as they will correct acidity,* but promote the secretion of bile, as well as a generous warmth in the first passages, and assist the digestion. For which purposes also, myrrh is an excellent remedy, when infants are a few months old. Should the vomiting be a symptom attending some other disease, its remedy will turn on the proper treatment of its cause. Should it follow upon a suppression of discharge behind the ears, and more especially if consequent upon the use of drying applications, a return of the discharge should be solicited. Or if the cause be the sudden disappearance of some eruption on the skin, appropriate remedies must be employed; the infant should be put to bed, and some light cordial be administered; and if the vomiting continue, an emetic should be given, and afterwards a blister, or warm plaster, applied to the pit of the stomach.

Having mentioned emetics, I shall take this occasion to observe, that the choice of them will be always best determined by the nature of the complaints for which they are administered. In those of the first passages, ipecacuanha is generally the best; but if a fever should attend, or it be wished to promote a general perspiration, those of antimonial emetics are preferable; or lastly, in disorders of the breast, the oxymel, conserve, or tincture of squills.

But a more troublesome vomiting will sometimes arise in unhealthy children, from too great a sensibility, or too great an irritability of the nerves of the stomach. Such medicines are then indicated as will brace, or strengthen that organ, and abate its sensibility. For the former, a cold infusion of the

* It is well known, how small a quantity of soap put into a churn, will prevent a due separation of the component parts of the milk, so as to allow very little or no butter to be made; whereas a little vinegar effects the separation almost instantaneously, and saves a vast deal of trouble.

bark, or of camomile flowers, with orange-peel and ginger, and sometimes a little rhubarb; for the latter, a saline mixture with a drop or two of laudanum; and the benefit of these may be increased by aromatic and spirituous fomentations to the pit of the stomach, or by the laudanum plaster, with a little theriaca* added to it; or the emplastrum cumini may be applied. Also the following:

R.—Ung. simpl. ℥ij.

Olei Macis (dict.)

— Rorismarini, āā ʒss.

Bals. Peruv. ʒij. M. F. Unguent. quo tota quotidie regio stomachi atque umbilici calidè inungatur, supraponendo ulterius morsum lanulæ.

Lastly, a vomiting may arise from a strangulated hernia. When, therefore, scarcely any thing is found, to stay on the stomach, or all the above remedies fail to remove a frequent disposition to vomit, practitioners will be aware of it, and make a due examination of the several parts where ruptures appear.

[The unusual occurrence of vomiting should lead us very carefully to watch the HEAD; it is frequently the first symptom of hydrocephalus.—M. H.]

[The following remarkable case exemplifies the power of recovery possessed by infants, as well as the advantage of persevering in the use of mild aperients.

Lady — was delivered, December 19th, of a fine male infant. A wet-nurse was in readiness to take the infant, a healthy young woman, who had been confined seven weeks of her first child, which was thriving. The infant appeared to do well in every respect for about three weeks; but did not become plump—its bowels now were a little disturbed; on the 19th of January, when just a month old, it became extremely

* All plasters are apt to produce about the parts they cover, an eruption of pimples, which are often thought beneficial, and are at least not injurious. The most efficacious mode of applying opiates to the abdomen of children, is either to rub them upon the part in the form of liniment, or to make a confection of oil of mace camphor, and opium. Of this a proper quantity may be spread upon leather, with a margin of emp. plumb. c. resina, and immediately applied over the part.—S. M.

sick, and had fallen away; a second wet-nurse was procured, who had previously borne and suckled two children. The infant, nevertheless, became emaciated and feeble, and after every attempt to suck above a minute, fell back exhausted, and threw up what little milk it had swallowed. The surface became pale, the extremities cold; the pulse feeble, and sometimes not perceptible; the bowels torpid; and no evidence of vitality remained, except the breathing. It lay just in the balance between life and death. A little breast milk was given at intervals with a spoon, which was as frequently puked up; vomiting was the habit, retention the exception; and the effort to suck was always followed by exhaustion. It had mild aperients; small doses of calomel, chalk mixture, magnesia, soda, potash, hydrocyanic acid, ammonia and brandy; as well as a leech to the scrob. cordis, and a blister.

An eminent physician saw the infant, advised bismuth, and to open the bowels with enemata, which indeed had already been administered, both aperient and nutritive. Immediately after each enema, the abdomen became tense, the skin red, the superficial veins turgid, and the infant was oppressed till the enema returned, mostly unaccompanied with anything like feculent matter, when it became faint and feeble. A distinguished practitioner saw him and suggested *liquor potassæ*; but the patient made no advance for the better.

(On a former occasion at a consultation with two physicians of reputation, I had a conversation with them on the case of a youth, now a medical student, who had rarely passed a day without vomiting. One of my friends was of opinion, that obstinate vomiting often depended on faulty action of the liver; in which case he recommended a moderate dose of the *hydrarg. cum cretâ* at night, and a dose of *decoctum alöes* c. every morning. The other eulogised the *bismuthi trisnitræ*, in doses of from ten to fifteen grains, with five grains of rhubarb, three times a day.) I conversed on the case with different medical friends whom I happened to meet in consultation, and the result was, that I determined to persevere in small doses of the *tinct. alöes, c.*, in conjunction with ammonia; and thus by combining a stimulant with a mild aperient, I hoped to counteract the

perverted action of the stomach, and to uphold the patient. As it was important to get down as much nourishment as could be borne, the medicine was given in breast milk. Mr. Griffiths, of the Edgeware Road, afforded his kind assistance from this time; and remained a part of every night, for two or three weeks, to observe the regular administration of the means. The infant had gtt. iv. of *tinct. aloës co.*, and gtt. i. *sp. ammoniæ arom.*, in a tea-spoonful of breast milk every four hours. He had, every intermediate hour, a tea-spoonful or two of breast milk; if more was given, it was almost immediately thrown up, and followed by a proportionate degree of exhaustion; occasionally a drop or two of the *sp. ammoniæ arom.* was added by the nurse to the milk. His feet, hands, and abdomen, were rubbed at intervals with an embrocation consisting of equal parts of *linim. saponis*, and *linim. camphoræ, comp.* Sometimes a mustard foot-bath was used; and a pledgit of lint, moistened with *tr. opii*, applied to the epigastrium. From the 1st to the 12th of February, when the distressing vomiting had somewhat moderated, the average daily report was, "twelve times sick, one motion." He was often laid down under the supposition that he was dead; and on a very cold day (it was a severe winter) it was scarcely possible to tell whether he breathed or not, or to keep warmth in the surface or extremities. He now had in addition grs. ii. of the *hydragryrum cum cretâ*, two or three times a week, continuing the *tinct. aloës comp.* and *ammonia*. On the 1st of March, when he had much improved, the report was "two motions, and only three vomitings." As the bowels became more regular, and the stools more natural, the frequency of vomiting diminished, the extremities were warmer, and the infant took the breast; but if allowed to suck for even a moderate time, the contents of the stomach were thrown up immediately. It may be observed, that the vomiting was mostly accompanied with an effort, and was not the mere spontaneous rejection from a superfluity of food, so commonly seen in infants.

On the 28th of March he had a discharge from both ears, which was relieved by small blisters, first behind one, and then the other ear. He could now be washed twice a day.

On the 31st of March he had not been sick for four days; but he was violently sick on the 1st and 2nd of April, his bowels having acted but once in the two days.

He now gradually improved, an aperient of rhubarb and magnesia or *pulv. scammoniae comp.* being given occasionally.

In May the infant went to Buxton. His wet-nurse was continued until he had cut the eight incisor teeth; and he was fed with great care, in conformity with the directions laid down in the article *Diet*. At three years old he had cut all his teeth, and was a healthy and strong boy.—H. D.]

GASTRITIS, OR INFLAMMATION OF THE STOMACH.

This is a disease very seldom met with, I believe, in this country, but is common in France, as appears by a paper read before the Royal Society of Medicine, in Paris, by Mr. Saillant, and is said to attack children of four or five years of age.

The pathognomonic symptoms of this disease are, great pain in the region of the stomach, sometimes recurring every quarter of an hour; violent contortions of the child; and the application of its hands to the seat of the disease. Mr. Saillant, in the first instance, suspected these symptoms to be owing to worms, and prescribed accordingly; but that child dying in a few days, the body was afterwards opened, and the presence of genuine inflammation of the stomach, and of part of the intestinal canal, was clearly demonstrated.

The treatment of this dreadful disease is, however, represented as very simple, consisting only in cooling and laxative remedies, which, when administered in good time, are said to be usually successful. For this purpose, Mr. Saillant has generally administered the juice of lettuce, by spoonfuls every hour; an idea he took up from Baglivi, who directed the juice of the sow thistle in the *hemitritæos*, under symptoms analogous to those of the gastritis. The juice of the lettuce was generally found to relieve the pains in a short time, and some infants who had been judged to be in an hopeless state, and even at the point of death, were perfectly recovered.

Mr. Andrij has done me the honour of acquainting me,

that he has sometimes met with this complaint in the Hospice des Enfants Trouvés, especially during the summer, and at such other times as infants have been obliged to continue there without the breast, from the want of wet-nurses, (who are usually otherwise engaged in the harvest and vintage seasons,) as well as during a hard frost. In the instances Mr. Andrij has seen, the infants were found to vomit up every thing that was given them, which, it is probable, must generally be the case where the stomach is actually inflamed. In such instances, perhaps, fomentations, or a blister to the stomach, and the use of a warm bath, together with castor oil, or other demulcent laxative, ought also to be made trial of.

TORMINA, OR GRIPE.

The Gripe is a very common term amongst nurses, and some writers on children's diseases have treated of it under a distinct head; but this serves to perplex matters, instead of explaining them. If a child be not hungry, nor hurt by some parts of its dress, there will always be symptoms attending to account for its crying, and other expressions of pain. The cause is, indeed, very commonly in the bowels, and may be increased by costiveness and wind, which have already been treated of; but more commonly manifests itself by a purging, which comes next in order to be considered. I shall only previously observe, that children, when very much griped, sometimes refuse taking the breast, though offered them repeatedly, when placed, in the usual manner, on the nurse's arm, but will take it, nevertheless, very readily, if they are held upright before her. The reason of this perhaps is, that the offensive and irritating matters in the stomach then descend from the cardia, which is exceedingly sensible from its numerous nerves; and this may further manifest the impropriety of infants being so uniformly fed in an horizontal posture, which I have noticed elsewhere.

[The more violent degrees of colic or gripes occasion much anxiety and alarm. The ordinary symptoms are excessive and long continued screaming, the patient at the same time drawing

up the legs to the abdomen violently, and kicking them out again, suddenly; oppressed breathing during the intervals of screaming, and an aggravation of pain from the slightest pressure on the abdomen. The skin, too, is commonly hot, and the face flushed.

The delicacy of the bowels of infants disposes them to be affected by slight causes, so that many circumstances induce colic, such as exposure to cold, inattention to changing their clothes when they become wet, improper feeding, either as to quality or quantity; a collection of acid, mucus, or air in the stomach or bowels, and too large or frequent doses of medicine. This disease is more apt to occur about the time of weaning, or soon after.

Infants may often be recovered when they are apparently at the last gasp; but then the practitioner must attend himself to the administration of his prescription, as success entirely depends on the remedies being immediately given. When called to an infant a few months old, in a violent paroxysm of this disease, immerse it immediately in a warm bath, if medicated with decoction of camomile and poppy, the better. When there is reason to believe that the stomach is loaded, give an emetic of gr. iij. or iv. of ipecacuanha, every ten minutes, till it operates. If the emetic is not indicated, give a warm draught of gr. vj. of rhubarb and gr. x. of magnesia, with gr. iij. of sp. ammoniæ arom. in dill-water. The rectum should be washed out with half a pint of gruel or barley-water; and when that has returned, an opiate enema, as ten drops of laudanum with an ounce of starch, should be administered. The skin should be wiped dry and the infant rolled in flannel, and put to bed with a grown person. A warm opiate plaster applied over the whole abdomen is often of infinite service, producing immediate relief. The following is an example.

R.—Camphoræ pulv. ʒj, ad ʒss.

Opii pulv. ʒj, ad ʒss.

Empl. resinæ, empl. plumbi āā part æquales, ad quantitatem idoneam.

M. ut ft. emplast.

The surface of the plaster may be rubbed over with a little *ol. menthæ piperitæ*.

The whole of this treatment should be gone through with all due expedition, as every minute is of importance; and the infant must be attentively watched for fear of a relapse. A dessert spoonful of the following mixture may be given every three or four hours.

R.—Mist. cretæ ℥ij.

Pulv. rhei. ℥ss.

Sp. ammoniæ arom. ℥ x.

Ft. mist.

Or, under common circumstances, a dose of the carminative mixture may afford relief.

The bowels must not be suffered to become costive, and the diet, for some time, must be most carefully regulated.—H. D.]

DIARRHŒA.

Under the article of vomiting it was observed, that frequent puking is oftentimes an attendant upon some other complaint, and then demands a peculiar attention, and is to be treated agreeably to the nature of such complaints; and there is, perhaps, none which it more frequently accompanies than a diarrhœa.

Both vomiting and purging very often arise from unwholesome milk or other food, and from a moist, cold air; as well as from the sudden disappearance of some eruption on the skin. The purging is not then easily to be stopped, nor should even absorbent powders be given, till the offensive matter is first carried off; and if a vomiting attend, the cure should begin by administering an emetic. But though the purging ought not to be checked without previous evacuations, nor to be stopped hastily, yet it is not to be treated with a daily exhibition of rhubarb, especially in very young infants, howsoever small the dose; which, though a common practice with many, serves to prolong a purging after the cause has been removed, by keeping up a continued stimulus, as I have fre-

quently seen. The diarrhoea, indeed, is a complaint often as difficult to treat as any in the infant state, and therefore demands the most precise directions. In a general way it may be said, that a sufficient dose or two of rhubarb should be administered in the beginning, and afterwards absorbents. If the purging should still continue, an emetic will be necessary, as purges do not always lie long enough in the stomach to carry off the offensive matter it contains. After this, it is often necessary that the child be purged again: for it should be always remembered, that many complaints of infants, whether seated only in the first passages, or attended with fever, will frequently seem to be giving way upon procuring stools freely, but will soon return if the same means be not repeated, till the whole irritating matter be carried down. Should such repetition fail of success, though the diet has been carefully attended to, the use of them at present should be laid aside, and recourse be again had to absorbents, and if there be no fever, to light cordials, and even to opiates; without the latter of which, many bowel complaints will not admit of a lasting cure, owing to the great irritability of infants. Such medicines are not, indeed, very often required, till children are some months old; but when they are found necessary, not only may syrup of white poppies, but even laudanum be given with the most perfect safety; though from the time of Galen, (who cautions against giving theriaca to children,) till of late years, many physicians have been fearful of directing them, (arguing from their abuse against their use,) and especially Harris, who, in other respects, has written so well on infantile diseases. I remember being called to see an infant of only two days old, who, through a mistake, had taken, some hours before, four drops of laudanum. The parents were greatly alarmed at the child's lying in a comatose state, without being able to take the breast, or open its eyes. I advised, therefore, to get a little breast-milk down with a tea-spoon, and encouraged them to believe that the laudanum would do no kind of harm; the infant having no disorder for which that medicine was improper. Accordingly, though the child lay sleeping above six and thirty hours, it afterwards awoke per-

fectly well. This is mentioned, however, only by way of encouragement to such as may be fearful of administering opiates, even when they are necessary. They are, nevertheless, very powerful medicines, and should be prescribed with due caution for patients of every age, especially for infants, and particularly when a purging is connected with teething, or is attended with fever; in which cases, I am almost daily seeing the fatal effects of arresting a purging. A like caution may be necessary in regard to cordials; which are, nevertheless, in many cases equally proper, notwithstanding a modern prejudice against them. There is a certain coldness and languor in infants when they are ill, especially under some bowel complaints; and whenever they may be in that state, a judicious use of that class of medicines will have a very happy effect.

It is to be remembered, however, that a purging is not always a disease; but, on the contrary, a remedy, and a very common and important one. The bowels are the great natural and critical outlet in infants, as the pores of the skin, and the kidneys are in adults; although in both, from their vast extent of surface, they spread a very broad mark for the shafts of disease. Not the mere discharge, therefore, but the cause of it is, in the first instance, to be removed; whilst the ill effects are to be guarded against by keeping the purging within bounds. For this purpose, the chalk julep, as it is an astringent only by absorbing the acrid, or changing the acid and irritating matter, is as safe as it is useful; and after the bowels have been well cleansed, and the irritating cause removed, will usually accomplish the cure.

It is the improper exhibition of absorbents, I apprehend, rather than their dose, that has made some practitioners so averse to them; for they certainly ought, in many cases, to be given in large quantities; but if administered too early, and long continued, the stools may become like plaster of Paris, and be with difficulty excreted. Such an instance is mentioned by Boerhaave, who had, nevertheless, a very favourable opinion of them, as will be noticed hereafter. There is, however, some fallacy in regard to the colour of the stools, as this kind is observed, on different occasions, in children who have

never taken any testaceous medicine, if the secretion of the bile be obstructed, (as in jaundiced adults,) and will be noticed in its place.

In his second edition, Dr. Armstrong mentions another method he has fallen upon for curing this disorder, which, however, appears to be recurring to the ancient method of treating bowel complaints; and seems, indeed, to overturn the idea he had entertained, of the superiority of wine of antimony over every other medicine. This method, he tells us, is by cleansing the bowels, by means of proper purgatives, joined with anodynes, intermixed in such a manner as to correct the griping quality of the medicines, and lessen the stimulus occasioned by the acrimony of the stools: a plan worthy of imitation; and, though not likely to be proper in all cases, yet, as an occasional practice, safe and beneficial.

Regard is to be paid to the kind of stools that come away, which are seldom healthy and natural, and are usually distinguished into the sour and curdled, slimy, mucous, green, pale, clayey, watery, over-tenacious, and bloody,* some of which are at times also fetid. Under some of these, and particularly the latter two, some powerful purgative, such as senna tea, is generally necessary, if the child is not very young. True, bloody stools are less common in infants than adults, and seldom occur but in the last stage of the disease; but a few streaks of blood may sometimes be mixed with the fæces, which arising only from the hemorrhoidal veins, is a matter of no consequence. Watery stools will be considered apart, under the head of the true watery gripes: I shall here anticipate only to say, that very threatening appearances of that affection, when green and curdled matters are purging off, are sometimes happily removed, in a day or two, by a gentle emetic, and such a warm purge as that noticed below. When the stools appear very slimy, and more especially sour, or curdled, or when the child is much disposed to hiccough, the magnesia, and other absorbent powders, are calculated to

* On fæces discoloured by blood, or otherwise blackish, particular notice has been taken under the head of Fever.

afford peculiar assistance, and may be warmed by any suitable aromatic. When the stools are very green, or white and clayey, a drop or two of the aqua kali may be occasionally put into the other medicines, or a little almond soap be dissolved in the clysters, which are essentially necessary when much griping attends this complaint. Some light cordial is also frequently useful, and the child's belly may be rubbed with a little warm brandy, or be fomented with a decoction of camomile flowers, or white poppy heads. But if the tormina be great, clysters of the whey of cows' or asses' milk, as advised by Hoffman, will often be found very useful; and should the infant be much emaciated, a portion of the sugar of milk* should be added to them. Where anodynes are judged proper, the tinct. hyoscyami is often preferable to laudanum.

It may be observed in this place, as a pretty general indication, that purgatives for infants ought to be made potentially warm, by the addition of a little ginger, pounded cardamom-seed, carraway tea, or dill water, which is of more consequence than is usually apprehended. I have, indeed, known a careful attention to this circumstance alone, happily suppress complaints in the bowels, which had long continued obstinate, though, in other respects, properly treated. On this account, I venture to recommend the following as an excellent general remedy, especially as infants are pleased with it, and it will keep for a great length of time.

R.—Pulv. Rhei gr. xv.

Magnes. albæ ℥ss.

Aq. Fœniculi.

Aq. Anethi āā ℥vj.

Syrupi Rosæ, ℥ss.

Spir. Ammonia comp. gtt. xv. ad xxx. Ft. mistura, ejus sumantur Cochl. ij vel iij. minima, bis, terve in die, vel ut opus sit. Or,

R.—Pulv. Rhei Nucis myrist.

Magnes. albæ āā gr. iij. vel iv. Sit pulvis è cochlearis minimo syrupi Rosæ deglutiendus.

* The sugar of milk may be procured by evaporating the whey by slow boiling, and may be made more pure by first clarifying it with the white of eggs.

Should purgings return frequently, it will be very useful (especially in the time of teething, or upon the striking in of some eruption of the skin) to procure a little discharge behind the ears, or to apply a Burgundy-pitch plaster to the back. For the former purpose, some finely pounded Spanish flies may be rubbed on the part, till a slight excoriation, or rawness, is produced; or perhaps a better method, which I have long recommended, is to draw a piece of coarse doubled worsted, or a bit of narrow tape, through a piece of the emplastr. Lyttæ, and lay it close behind the ears where they rise from the head, and repeat it occasionally; which will produce a discharge exactly from the spot where it is wont naturally to arise. The following preparation is highly extolled by Boerhaave,* as an almost universal medicine in the diseases of infants; and is certainly a good remedy, especially in their bowel complaints, and particularly when attended with green stools, after the exhibition of proper opening medicines.

R.—Sapon. dur. Hisp. ʒij.

Margarit. ppt. ʒj.

Syr. Alth. ʒss.

Chel. Cancr. ppt. ʒjss.

Aq. Menth. sativæ

— Fœniculi āā ʒiij.

Ft. mistura, cujus sumatur cochl. infantum octavâ quâq. horâ.

Notice is taken in another place,† of pale stools being no uncommon occurrence when children are breeding their teeth. They are also met with in fevers, as well as in simple disorders of the bowels; and therefore might be introduced under either of the former heads, instead of this place; but as the stools are very numerous and watery, and the purging itself is the first occurrence, it has seemed, upon the whole, proper to give it a formal discussion under the present article.

The complaint, however, has been found the most obstinate

* Epist. 1: ad J. B. Bassand.

† See the chapter on Teething.

in children who are turned a year old, and cutting their double teeth. The stools are not only clayey, thin, and very white, but curdled like those of very young infants at the breast. In the beginning, it is seldom attended with any degree of pain, or other complaint, except it be the loss of appetite; and this has led parents, and sometimes other people, to think, that the discharge ought to be checked by absorbents or opiates. But nothing can be more improper: the skin soon becoming hot, the tongue white, and the disorder rarely yielding to any treatment under two or three weeks. This is almost always the case, if teething be any wise concerned in the complaint, unless the teeth happen to be nearly cut through; though a purging with pale stools, as has been said, is met with in fevers of another kind, where the cause is confined wholly to the first passages.

Whatever the age of children may be, they are always somewise indisposed, while the alvine discharges are of this colour; and whether there be either fever or purging, or not, children lose their flesh; as it is, indeed, likely they should, from this clay-like matter sticking to the coats of the intestines, and preventing the due absorption of the nutritious parts of their food. This is especially true, when the stools are thick as well as pale; or if they be of a leaden blue colour, and very adhesive, or pasty, and in amazing quantity, as is sometimes the case.

Under these last circumstances, particularly, small doses of calomel, administered as an alterative, are an admirable remedy.

Whether teething be materially concerned or not, purging, in one way or another, is the proper and principal remedy, unless the gums are in a state to be lanced, or the stools should continue a long time very pale, or clayey, after the fever and purging disappear. In the latter case, some sapo-naceous medicine will prove serviceable, such as the *aqua kali præparati*, or a few drops of *spiritus ammoniæ compositus*, taken two or three times a day; the bowels being still carefully kept open.

Where dentition is the probable source of irritation, and of these pale stools, and lancing the gums has not accelerated the eruption of the teeth, or the period is too early to expect benefit from it; children are oftentimes not only free from fever, but are, on the other hand, cold and languid, and should, therefore, be purged less frequently. Some cordial medicine should also be administered on the intermediate days, as well as on the evenings after the physic has operated.

In the early part of the disease, the active purges are the most proper, such as castor oil, senna, and frequently calomel; or, if the fever be considerable, an infusion of burnt sponge and senna; a preparation equally adapted both to the fever, and this kind of purging.

Another bad kind of stools appearing sometimes during teething, has been alarming to many, as nothing like it, that I know of, appears spontaneously in infants at any other period; though it is not uncommon in adults, and especially, I think, in females: this is a discharge of a very thick mucus, which appears in great quantities, and sometimes accompanied with a little blood. Neither of these discharges, however, do any harm, if the bowels be kept a little more than usually open, by some soft purgative, and some light cordial interposed, or the *test. ostreor. ppt.* if found necessary, in order to strengthen the bowels.

The cause of this appearance seems to be of the same kind with that in adults, and from mere irritation falling on the glands of the bowels, and keeping up an increased secretion of their natural mucus: and it is well known, that the time of teething is that in which the bowels are peculiarly liable to irritation.

To the various observations that have been made, I shall briefly add, that there is a disordered state of bowels, which frequently occurs, and is disposed to continue a long time, during which, infants, though not often precisely ill, do not thrive, nor look well. The stools are said to be always bad, being sometimes of a green colour, at others of a pasty consistence; sometimes the evacuations are very numerous, and at others, the bowels are for several days very costive.

In this, as well as in other bowel affections before described, when laxative, alkaline and absorbent medicines have been found to procure no permanent good effect, calomel often proves a sovereign remedy; and may be given in the dose of half a grain, or more, to infants in the month, for two, three, or four successive nights. In general nothing purgative should be administered the following mornings, but the mercury be left to its proper action. It is certain that this mineral has a marked operation on the liver, obviating a morbid action, and acting as a stimulant, when the functions of the liver are inert; it is an equally well known deobstruent for all the glandular system, and will be found a very safe and efficacious medicine; infants being known to bear mercury much better even than many adults.

When purgings have continued a long time without any amendment, a peculiar tightness of the skin will sometimes take place in the last stage of the disease, affording always an unfavourable prognostic; and of which notice has been taken under the article of Skin-bound.

In treating all cases of purging in infants, our attention should be especially directed to two objects:—first, the feel and appearance of the abdomen; secondly, the character and kind of the evacuations. Upon feeling the abdomen, (which should be done while the child is in an easy posture and not crying,) if it be found full, hard, or irregular in its shape, a purgative will almost certainly be required, notwithstanding the frequent evacuation of fecal matters. The most effectual purgative in such cases is a grain or two of calomel, either combined with jalap, scammony, or rhubarb, or given by itself, and followed in an hour or two by a dose of castor oil, or a solution of salts in almond emulsion. This purgative is to be repeated according to circumstances, and in the mean time a cretaceous mixture may be given at intervals, or what is often preferable, a solution of carbonate of soda or potassa, in mucilage or emulsion.

If the evacuations be hard, lumpy, scybalous, or pasty, or of a green, or leaden, or blackish colour, the same plan is required; and the aperients must be continued daily, or as often

as may be found necessary, till the evacuations become of a better consistence and better colour.

When the use of the more active purgatives shall have relieved the complaint, the cure must be perfected by giving a small portion of ipecacuanha, a grain or two of rhubarb, and a few grains of chalk, with the addition of a little aromatic, twice or thrice a day.

But when the abdomen is not full, hard, or irregular in shape and feel, but flabby and collapsed; and when the stools are thin and watery, pale coloured, or white and frothy like yeast, the use of calomel and purgatives is to be rejected, and other more appropriate means must be employed. The case now requires the use of cretaceous medicines, kino and catechu; opiates must be occasionally interposed; and an attempt must be made to improve the secretions, by three or four grains of hydrarg. c. cretâ, or a grain of pil. hydrarg. rubbed into a powder with four or five grains of carbonate of magnesia: sometimes a combination of ipecacuanha, rhubarb, and soda, very effectually answers this purpose. Change of diet, as Dr. Underwood recommends, is indispensable, and change of air is sometimes to be recommended.—S. M.

Decoction of logwood is also an excellent remedy.

LIENTERIA, OR WATER GRIPEs.

I come, lastly, to treat of the Lientery, or true Watery Gripes, so called, which is esteemed the most dangerous of all purgings, and is often fatal; but if properly treated, children may recover from this as well as from excessive purgings of any other kind, unless it happen after some other illness, or to very small and tender infants during the month, especially when attempted to be brought up by hand. It is not the having a few very thin stools, however, that is an evidence of the true watery gripes, for in almost every purging of a few days continuance, the stools are very thin as well as numerous. But in this case, they are thin very early in the disease; the child looks wretchedly, and every thing it takes runs almost immediately through it, with very little change,

as in the Lientery of adults. It should likewise be remarked, that these symptoms continue, and are increased as the disease advances. A distinction should be made between purgings in which the stools are very watery, and the true watery gripes. In the first, the stools, though equally or more numerous, are more perfectly fluid than in the true watery gripes, and are tinged only with the bile; the thin stools arising from a violent, but ineffectual effort of nature to get rid of offensive matter; and upon exhibiting a warm purgative, calomel, or castor oil, several very thick, and always clayey stools are brought away.

In the true watery gripes the cure should be begun by administering one or more emetics, especially when the stools are of a dark colour and fetid; as they frequently are in the earlier periods of the complaint. And to this end, a pretty strong one should be prepared, which should be given in divided doses, at about a quarter of an hour's distance, till a proper effect is produced; and some hours afterwards a warm purge with rhubarb should be administered, if the disease be not very far advanced. After the first passages have been cleared, the eighth part of a grain, or less, of ipecacuanha, or a drop or two of wine of antimony, given every three or four hours, with a few grains of the testaceous powders, or the aromatic confection, appear to me amongst the best remedies in the earlier periods of the complaint. Indeed, ipecacuanha in very small doses, especially if duly guarded by some gentle aromatic, is both so useful and safe a remedy, that it should not be hastily laid aside; and when persevered in for some time, will effect wonders, not only in long purgings, but in other chronical complaints. The like may be said of the *vinum antimonii*, which in the less aggravated watery gripes, or where a purging is for a long time attended with very bad stools, forbidding the use of restringents, as well as in some little feverish complaints, I have found equally useful, and even sometimes more manageable as an alterative than ipecacuanha, because less disposed to nauseate infants, where an emetic may not be directly intended. There being also cases in which the physician wishes a medicine to operate as a corrector of the secretions in the first passages, or to expel

their contents, either upwards or downwards, as may be ultimately most useful; antimonials seem in this view likewise to claim a preference to all other medicines.

In the more advanced stages of the watery gripes, and where the child is not very young, the following old medicine is a very good one. Of Locatelli's balsam, one ounce, and conserve of red roses, two ounces: from the quantity of a horse-bean to that of a nutmeg may be given three or four times a day, according to the age of the child. Others have advised red bole, and gum tragacanth.—The labdanum, and other plasters likewise, as directed for vomitings, or the following, may be applied to the parts above the navel, especially in case of great pain.

R.—Theriac. Venet. ℥j.

Olei expressi Macis dict. ℥ij.

Olei N. Mosch. gtt. iij.

Misce, ft. empl. alut. induc. Or,

R.—Axung. Anserin. ℥ij.

Olei expressi Macis dict. ℥j.

——Menthæ sativæ, ℥j.

——Bacc. junip.

——Chamomæl. āā ℥ss.

Misce ft. linimentum.

Inungatur eo bis vel ter quotidie stomachi et umbilici regio.

Warm flannel, with or without heated bran, may be afterwards laid over the whole belly, and renewed frequently.

Should these means fail, I have known the repetition of a vomit give an immediate check to the complaint, especially where the stools continue to be remarkably sour. As long as this is the case, it would be both vain and hazardous to exhibit opiates, or powerful restringents; the acidity must be first carried off by warm purges, and be corrected by absorbents; the latter of which must be given in large and repeated doses, and frequently their powers be augmented by the addition of *liquor potassæ subcarbonatis*, or *tinctura myrrhæ*. And an excellent remedy sometimes, as an ant-acid, is the *spiritus ammoniæ succinatus*. The acidity once removed, a starch clyster may be thrown up, two or three times a day, with or

without a few drops of laudanum, according to the number of the stools, and weakness of the infant. A drop or two of laudanum likewise may now be given, once or more in the day, (according to the age of the child,) either joined with some purgative, or in any of the before-mentioned medicines, or in the chalk julep, made warm with tincture of cinnamon, or of cardamoms; and in cases of extremity, in the decoction of log-wood, which agrees very well with young children: or a medicine now out of use, I mean the rob of sloes; a few grains of which, with a little grated nutmeg, and a small quantity of rhubarb, p. r. n. I have found immediately successful, after opium, decoct. campechense, and every ordinary restringent have failed to produce any lasting benefit. In the advanced stage of watery gripes, or in case of great debility, the liberal exhibition of aromatics and opiates is essentially necessary.

Bowel complaints, it is to be remembered, are frequently owing to improper food, which, on this account, should at all times be peculiarly attended to; and when a purging has taken place, ought to be suited to the nature of the stools. In the introductory remarks ample notice has been taken of children's food; at present I shall only observe, that cow's milk is often found to disagree with them when their bowels are disposed to be too open, at which times a little lean mutton broth, or beef-tea, is much to be preferred. On the same account, rusks and biscuit-powder are more suitable than bread; but at other times, I believe, either the Uxbridge, or the French roll, which are already half-digested by a previous fermentation, are more easily dissolved in the stomach, if there be not a predominant acid in the first passages. But where there is an habitual disposition to a purging, I know of no diet so proper for infants who do not suck, or who cannot have enough of the breast, as flour slowly baked for a long time, till it breaks into a soft, greyish-coloured powder,* and afterwards mixed with boiled cow's milk, the scum being first taken off; the flour and milk should then be boiled a little time together, till the whole

* To this end the flour should be put into a small jar, properly covered, and taken out of the oven several times, and stirred up from the bottom and sides of the jar, that it may not run into hard lumps, but the whole be equally baked.

appears like a thin custard. This is a very light and soft food, and sufficiently restraining; and I have often known more good from it than from all the absorbent medicines ever devised, and have received more thanks for the prescription, as it proves a permanent remedy. The powder of arrow-root, also, boiled in water, and then mixed with milk, is an admirable remedy when it can be procured genuine. When the watery gripes, or indeed any violent purging, attacks very young children at the breast, no other food than breast milk ought to be administered; but if the acidity and purging continue many days, and medicines do not take a proper effect, it may be proper to change the wet-nurse.

If infants ill of watery gripes are brought up by hand, the strictest attention must be paid to their food, which must be changed from one kind to another, and especially trial be made of broths, as long as the food shall be disposed to turn very acid on the stomach. In one case, I think, I saved a child by Bates's *julepum vitæ*, lowered with water, when nothing else would stay on the stomach. This served both for food and medicine; for the former of which it was still further diluted.

When children who are weaned are attacked with repeated purgings, and even broth is found to run through them, I have observed no food so generally useful as a bit of the white of chicken, not over-boiled, and afterwards lightly bruised in a mortar with the chicken liquor, and a very little bread, into a kind of light jelly, or panada. But this should not be given oftener than twice, or at most, three times a day.

In all bowel complaints it has been already remarked, that infants are disposed to eruptions on the skin; by which they are so frequently benefited, that if any kind of rash appears during long and severe purgings, a recovery may almost with certainty be prognosticated. The like good effects have been noticed from a purging taking place in some obstinate cutaneous eruptions.

INCONTINENCE OF STOOLS.

The long continuance of the last mentioned complaint, as well as others which may debilitate the habit, may prove an occasion of that now under consideration; children who are accustomed at all times to have a very open belly being especially liable to lose the faculty of properly retaining their stools, and needing a servant continually to attend them, even at two or three years of age.

No very particular remedy, I believe, is likely to be necessary. I have never ordered any thing more than dashing the parts, daily, with cold water, or at the most administering *aqua calcis*, or other absorbent; the complaint always wearing off as such children grow up, though oftentimes not entirely for several years.

WORMS.

Human intestinal worms are distinct from all others; they are evolved from the ovula that exist in the human body, and in no other situation; that is, they generate, and produce their species in the stomach and intestines.

Such is the nature and office of the human stomach and intestines, that insects and worms, and their ovula, may not unfrequently be conveyed into them with the food; but such insects or worms do not live long, and seldom, if ever, produce their kind in a situation so widely different from their natural one. Occasionally worms have crept into the intestines. We have met with what appeared to be the larva of the common meal worm; and in two different instances, with worms from children about three quarters of an inch long. They had round bodies, narrowing at each extremity, and little bristles springing from the whole surface resembling hedge-hogs in miniature, and were very vivacious.

Worms may, probably, exist in almost any part of the body, as well as in the stomach and bowels. They have, accordingly, been found in the pericardium, the bladder, the nose, the sinuses of the head, and even in the lungs, liver, and other

solid parts.* But as we neither know how they are produced, nor how to dislodge them from these recesses, which they also more rarely occupy in young children, it is quite sufficient to notice the fact; our inquiries being properly confined to worms in the first passages.

It is on this account that the complaint is noticed in this place, especially as worms are said to have been voided by infants of only a few weeks old. It is even reported† that Van Dœveren has discovered them in the still-born foetus. This, indeed, is much doubted by others, it being a very old observation, that worms are never voided by infants who are nourished only at the breast; and if so, it is not likely they can be generated before birth. Mr. De Lille, however, disputes this, asserting that worms were expelled from his own daughter, when only eleven weeks old, and living entirely at the breast.

However this may be, it is evident that worms are much oftener suspected to be the cause of children's complaints than positively ascertained; and of this, practitioners who deal in secret medicines have, in every age, made their advantage; it being certain that a mere foulness of the bowels will produce most of the evils attributed to worms. Neither are all children equally affected by them where they are actually met with; some infant children (as well as quadrupeds) continuing very healthy, though they are seldom free from them, and others parting with great numbers, unexpectedly, without any previous indisposition; whilst some children are very ill who have apparently very few. The pains and other complaints in such case arise from some other source, of which I have seen an instance in a girl of twelve years of age, long subject to excruciating pains of the stomach, for which she took various

* Baglivi reports, that worms are found in the heart; Ruysch in the lungs, the spleen, the kidneys, in the gonorrhœal discharge, and even in the marrow of the bones; Schenkius in the urinary bladder; Bianchi in the uterus and in ulcers; Hippocrates in the vagina; and they are said to be frequently found under the skin of the Negroes in our West India islands.

† Philosophical Transactions.—The same author reports that a peasant, after taking an emetic, brought up forty Dutch ells of tape worm, and yet left some part remaining, having, through his agony, bitten the worm off.

worm medicines, and actually parted with several large lumbrici, but without the least relief to her pain, which afterwards immediately yielded to antispasmodic remedies.

I, nevertheless, cannot agree with Dr. Butter, that worms in the human intestines are altogether innoxious, much less, as he seems to think, useful, and intended as "nature's remedy for destroying the superabounding morbid humours, and for stimulating the first passages by their crawling motions, and thereby assisting the peristaltic motion of the guts to carry off what remains of the offending load."* For I think children who are most troubled with worms are generally of a costive habit.

Worms become hurtful chiefly from their numbers. First, when they obstruct the bowels, or compress the adjacent parts by their bulk. Secondly, by sucking up the chyle designed for the nourishment of the child. Thirdly, by irritation. Fourthly, by actually destroying the parts; though this is certainly a very rare occurrence, and a far less frequent source of injury than those before mentioned. Worms have, however, been said to eat their way through the intestines; and Lister relates,† that some resembling the teretes, but of a whiter colour, have been seen coming from an abscess on the ankle. They are likewise said to have occasioned sudden suffocation, by rising up into the throat and lodging there.‡

They have been usually accounted to be of four kinds; or, to speak more correctly, according to Drs. Baillie and R. Hooper, the native human intestinal worms are divisible into two orders, round and flat; the former comprehending, 1. the *Ascaris Lumbricoides*, or *Teres* (the long round worm, resembling the earth-worm); 2. *Ascaris Vermicularis* (the maw, or thread-worm); 3. *Trichuris Vulgaris* (the long thread-worm).

The second order embraces, 1. *Tænia osculis marginalibus*

* Butter on Remittent Fever. Page 36, et seq.

† Philosoph. Trans. See also Heister. Their appearance on a sore may, however, be otherwise accounted for, than by supposing them to have made their way from beneath the ulcer.

‡ Mr. Le Febure de Villebrune.

(the tape, or long joint worm, *solium*.) It is the separate joints of this species which constitutes the *tænia cucurbitina*, or *gourd worm*, from its resemblance to the seeds of the gourd, or water-melon. 2. *Tænia osculis superficialibus* (the broad tape-worm.) This species seldom separates into joints. It is very seldom met with in this country, but is endemic in Switzerland and Russia, and very common in Germany and other parts of Europe. Linnæus enumerates another species, which, he says, has two oscula, one on each side, and which he terms *tænia vulgaris*, but which is thought by some to be merely a variety of the other.

The *tænia*, it is well known, is often many yards long, is the most hurtful of all, and most difficult of cure, because it will remain long in the bowels even after it is dead, and is then seldom brought away but in pieces, and that by very powerful medicines; though I think I have seen dead portions of this worm come away where no kind of purgative has been administered. But as this kind of worm is certainly not common in children, though it may sometimes have been met with, and as it generally occasions a variety of symptoms resembling other complaints, for which many different medicines may be required, little more than the mention of it may suffice.*

The symptoms of worms are various, and many of them very equivocal: I shall name only the more constant, and less uncertain ones. Such are fetid breath, especially in the morning; bad gums; itching of the nose, and of the anus, especially from the *ascarides*; a very irregular appetite, always in extremes, whether of hunger or of loathing; a large hard belly; pains at the stomach; sometimes vomiting, oftener costiveness, or irregular purging, with slimy stools;† irregular

* It is so uncommon to find more than one of this kind, that it has acquired the name of the solitary worm, yet it is said there are a few instances in which several of them have been met with; but, perhaps attention enough may not have been given in the examination of them, it being well known that this worm will live a long time after it has been broken into several parts. See Letter of Dr. Nitret to De Haen, Act. Med. xij. 219. The head, and probably that alone, has the property of forming the joints, so that, if that be left after the rest of the worm has been voided, fresh ones will be produced.

† The peristaltic motion of the intestines being increased, the secretion of the mucus must consequently be in larger quantity.

cholics; thirst; dulness; peculiarly unhealthy and bloated countenance, with a dark, hollow circle round the eyes; startings in the sleep, and grinding of the teeth. To these symptoms are often added slow fever, with a small and irregular pulse, pale, or whitish urine, a short and dry cough, (which is an almost constant symptom where the complaint is of long standing, and has injured the health,) sometimes even convulsions, tetanus, epilepsies, and partial palsies of the lower extremities. In the case of convulsions, if there be a small pulse, attended with a hiccough, it is an almost certain sign that the convulsions are occasioned by worms. The like may be said of pain at the stomach, if it be very violent, sudden, attended with great anxiety, and a hardness and soreness of the parts above the navel. But more especially, according to Home, an œdematous swelling of the upper lip, and of the nostrils, is a certain token of worms.

The cause of this troublesome complaint is not, perhaps, certainly known; but the great moisture of young persons is thought to be an occasion of their being more infested with them than older people; and children, whose digestion is weak, are more liable to them than others. Hence, debility seems as much a cause, as it is an effect of worms. Since the doctrine of equivocal generation has been justly exploded, it has, however, been generally imagined, that worms are engendered from the eggs of insects, which float in the air, or are swallowed with some part of our food, such as summer fruits, vegetables, cheese, and some kinds of flesh meats. But, perhaps, this is not altogether so certain as it may seem at first sight, unless we are to imagine that these supposed eggs produce very different insects, from being taken into the stomach and bowels, than they would if deposited elsewhere: since it is generally thought, that insects of this kind, especially the tape-worm, are not met with anywhere else;* neither will it ac-

* Although this seems to be the fact, there are not a few learned men of a different opinion. Many travellers, and others, better acquainted with natural history than I am, have reported, that the very same kind of worms may be met with amongst vegetables, in the earth, and both in standing and running waters. That the tape-worm, particularly, has been seen in the waters above Constantinople, where the

count for their existence in the unborn fœtus, if that be really a fact. It is, however, more than probable, that they were destined by nature to be generated, and to live in the bodies of other animals, as observed by Dr. Black* and Rosen.

But whatever be the cause, the general intention of cure is obvious enough, which is to bring them away in the most easy and expeditious manner, whether alive or dead; the difficulty chiefly consisting in dislodging them from their firm attachment to the sides of the bowels.

In this view systematic writers state the indications to be, first, to destroy the nidus, and secondly, to kill and expel the worms. The first may be effected by alkalies, as *potassæ sub-carbon.*, *sapo venet.*, bitter aromatics, and mercury; or by resolvents, as the gums assafoetida, galbanum, and such like. Secondly, worms are killed by oils in clysters, especially with the addition of the infusion of the *semina santonici*; by honey, and by indigestible substances, as the testaceous powders, steel, and tin; and by poisons, as preparations of mercury, which at the same time expel them. To these ends, indeed, a variety of medicines, pretty much of the same kind, have been devised, and have served the cause of empiricism in every age; most of which consist either of the bitter purges, or mercurials.

Worms existing in the bowels can, indeed, only be carried away by purging; and very active purges are indicated when the time of life and the constitution do not forbid. But when these are tender, gentle purges given daily for some time, by the constancy of their operation produce, without harm, an effect, equally, or perhaps more beneficial and lasting, than

complaint is very common: and that natives of northern climates, who have resided for any length of time in Turkey, are very frequently afflicted with the tænia, as it is supposed, in consequence of drinking of the foul standing waters of that hot climate. Linnæus also, and others, have thought the teretes, or lumbrici, to be the same with the common earth-worm; but Tyson has, by dissections, demonstrated the contrary.—*Philosoph. Trans.*

* Treatise on the Generation of Intestinal Worms, and on the Means of destroying them.

See also, Dissert. of J. Mathieu Gesner, Mem. Gotting. An. 1751.

the active purges. These are often conjoined, or administered alternately with bitters; and hence have arisen the family receipts, as worm-seed, tansy, and such like, given in treacle, or honey; or joined with rhubarb, senna, or other gentle laxative. With many, and especially French writers, the male fern, alone, is reckoned a specific. Olive oil, likewise, has been said to be a good remedy, as being destructive to worms; but castor oil is preferable, which, by its purgative quality, also carries them off by stool. Dr. Parr, in his Medical Dictionary, recommends the *helleborus fœtidus* as a specific.

Agreeably to the above view of gradually ridding the habit of these vermin, children of a delicate frame, and such as have not been long infested with them, may begin by taking a small dose of *infus. sennæ* every other morning; but should this prove insufficient, a few grains of *pulv. è scammon. cum calomel.* may be given the over night, once or twice a week, according to the age or strength of the child, and some tonic medicine be interposed. If much purging should, on any account, be found improper, the following is very safe and often effectual.

R.—Limaturæ Stanni, ʒij. Hydrargyr. ʒiij.

Misce, fiat amalgama.

Eight or ten grains of this substance, with three or four grains of rhubarb, and as much unwashed calx of antimony, may be taken every morning in a little honey for a week together; after which, a clyster of *succotorine aloes*, dissolved in warm milk, should be thrown up over night, and a proper dose of rhubarb, or senna tea, be taken the next morning; which course may be repeated, as the obstinacy of the complaint may require, and the strength of the child admit. Volatile alkalies also, in some debilitated habits, will prove serviceable, and valerian, especially if it be occasionally joined with jalap. But one of the most powerful means, long in use with country practitioners, and strongly recommended by the late Mr. Chamberlaine, is the *dolichos pruriens*, variously prepared; but the most simple form, that of giving it mixed up with treacle, is, perhaps, the best of all. It should be taken night

and morning for three or four days, and then be purged off with senna tea, or jalap; and this course be repeated, as occasion may require.

Amongst other means, especially for such as may be at a distance from medical assistance, is a mixture of pewter filings and treacle, of which children of four or five years old may take several tea-spoonfuls in a day, which they will readily do, for the sake of the treacle. At the same time, from five to ten grains of jalap, with as much of the *hydrargyrum cum sulphure*, should be given twice every week, to purge off the dead worms. Dr. Rush, of Philadelphia, strongly recommends the rust of iron, from five grains to half a drachm, for infants from one year old to five, exhibiting a purge every fourth or fifth day, to carry the worms down, as they die. To answer the last purpose, the following plaster is sometimes sufficient:

R.—Aloes ~~succ~~cotorin.

Pulv. flor. Chamæm. āā ʒj.

Tereb. venet. Q. S. ut ft. emplastrum (cum margine emplast. adhæsivi) apud regionem umbilici admovendum; sed ante applicationem, imponatur loco umbilici morsum gossipii.

Or equal parts of bullock's gall, and powdered aloes, may be mixed up with any unctuous substance, and the parts below the naval be anointed with it, two or three times a week; or succotorine aloes and powder of dried rue, made into a plaster with Venice treacle, and applied round the navel, first covering that part with a little cotton.—I mention these things with a view to the country poor, whom the benevolence of practitioners may incline them to assist, and who may, by these easy means, do it at little expense to themselves.

If the complaint, however, has been of long standing, and the child not very young, mercurial purges are a more expeditious, and a safe remedy; though the *hydrargyrum cum sulphure* taken for a length of time, and occasionally purging with senna, has sometimes succeeded, even where there have been the severest convulsions. For which likewise, or obstinate contractions of the limbs, the warm bath is often essentially necessary.

Throughout the cure, and indeed afterwards, the diet should

be strictly attended to, and all fat and greasy aliments abstained from. The child should live upon milk, broths, and meats of easy digestion, with toasted bread, and honey instead of butter, which is exceedingly pernicious. To prevent a return of the complaint in older children, or grown people, chalybeate waters and bitters may be made use of.

As it is not my intention to enter formally into the distinct treatment often necessary for the *tænia*, (which, indeed, I have sometimes seen brought away by very gentle means,) I shall do no more than refer to Schmucker's medicine, the celebrated remedy of Madame Nouffer, said to be made use of with great success in France and Geneva; as I have also known it to be, two or three times, in this country. It can in nowise, however, be proper for young children, though it may, possibly, be safely had recourse to for robust youths, growing up to manhood. It is intended to operate very powerfully on the bowels for many hours, the patient being supported the while by repeated large draughts of broth, or green tea. The preparation of the preceding day, and some other precise directions, are equally needless in this place, and perhaps the previous exhibition of two or three drachms of the *radix filicis masculini* is of as little importance.—For a full account of the process, the reader is referred to Madame Nouffer's Treatise, published by Dr. Simmons, anno 1787.

The purge is as follows:

R.—Mercur. dulc. optimè sublimat.

Resin Scammonii elect, āā gr. x.

Gambogiæ gr. vj. vel vij.

Conserv. Cynosb. Q. S. ut ft. bolus.

The Cevadilla, or Indian Caustic Barley, is recommended by Schmucker in the fifth volume of the Journal de Petersburgh,* as an almost infallible remedy for the *tænia*. He directs a drachm of the seeds, in fine powder, to be given every

* Mr. Loeffler, the author of the Journal, assures us, that it may be taken thus with perfect safety; and annexes cases of its success in expelling worms of different kinds. A very powerful remedy, much used in the West Indies, particularly for the lumbrici, is the *Spigelia Anthelmia*, a species of Indian pink; but it has not been much used in this country.

morning, fasting, mixed with honey; and to exhibit on the fifth morning a drastic purgative.

Mathews, late apothecary at Berlin, received an annual premium from the King of Prussia, (1801,) for his arcanum for the tape-worm, viz.

R.—Limat. Stanni. angl. pur. $\mathfrak{z}\text{j}$, pulv. rad. filicis maris $\mathfrak{z}\text{vj}$, pulv. semin. cynæ $\mathfrak{z}\text{ss}$, pulv. rad. jalapæ resinosæ, salis polychresti, āā $\mathfrak{z}\text{j}$, mellis commun q. s. Misce ut fiat electuarium.

R.—Pulv. rad. jalapæ resinos., salis polychr. āā $\mathfrak{z}\text{ij}$. scammonii aleppensis, $\mathfrak{z}\text{j}$. gummi guttæ gr. x. misce ft. cum melle communi, electuarium.

He directs a spare diet of only broths and vegetables before the exhibition of the medicine, of which a tea-spoonful is to be taken every two hours, for two or three days, till the worm is felt moving in the bowels: the patient is then to take of the purgative electuary likewise a tea-spoonful, every two hours, till the worm passes off. If it should not, castor oil is to be taken with it, or to be administered in clysters.—These remedies should be proportioned to the age and constitution, and under the eye of a physician. The goodness of the fern is an important matter, viz. the root of the *polypodium filix mas*, which, when reduced to powder, is of a reddish colour.—(Saltsburgh Medical Chirurgical Gazette, in German, No. 39.)*

The late Dr. James Sims succeeded with the *ol. terebinth.* of which the patient for another complaint had taken two drachms as a dose: but possibly that disorder might concur with the medicine in expelling the worm.†

[We prefer in children giving the *Sp. Terebinthinæ*, in $\mathfrak{z}\text{ss}$. or $\mathfrak{z}\text{j}$. doses, in this form:

R.—*Sp. Terebinthinæ*, Mellis, Mucil. Acaciæ āā $\mathfrak{z}\text{ss}$. Aq. destil. ad $\mathfrak{z}\text{ss}$. ft. haustus 6^{ta} quaque horâ, sumend.

* Medical and Physical Journal, No. 26, for April, 1801.

† The *oleum terebinthinæ* has, on many occasions, very effectually expelled the tape-worm; and in some other cases of worms has been useful. For the tape-worm it should be taken into the stomach undiluted, in doses for adults of six or eight fluid drachms. For ascarides it may be given in clysters.—S. M.

Every second day an efficient dose of calomel should be given, with *Pulvis Scammoniacæ, comp.*, or a dose of castor oil; or the *Sp. Terebinth.* may be given in milk.

We have never met with *Tænia* in children under eight years old, or known it resist this treatment.

For *Ascarides*—an enema of some strong bitter infusion, as of wormwood or chamomile flowers, or *Semen Santonici*, should be administered moderately warm, slowly, and in sufficient bulk to distend the rectum, and through a large pipe; it is desirable that it should remain up some time; it is to be repeated twice a week; and on the intermediate day, a brisk purgative may be given, and generally the administration of three or four enemas, with the intermediate aperients, will be sufficient.

As debility of the organs of digestion, unclean bowels, deficient exercise, improper food and clothing, are the circumstances most favourable to the propagation and continuance of worms, it is vain to give medicine, unless we endeavour, by appropriate means, to restore the general health. Exercise should be taken in the open air. The strength of the digestive organs should be increased by tonics, for which purpose the bitter vegetable infusions, in combination with soda, and some aromatic, may be given; the chalybeates, where they can be borne, are better still; the abdomen should be rubbed with stimulating embrocations; and where the abdomen is large, a roller or belt should be applied. The food should be nutritious, and somewhat stimulant, and taken in moderate quantities; all unripe fruit, and *ill-dressed vegetables*, should be avoided. The child must be sent into the country.—H. D.]

CONVULSIONS.

Convulsions may be induced by the last mentioned, and by several of the preceding complaints. They are of two kinds; the symptomatic, and the idiopathic; though the distinction may not, perhaps, be perfectly philosophical, or accurate. It is for want of some such discrimination, however, that writers have had occasion to observe, that children are much oftener

supposed to die of convulsions than they really do : for though a convulsion frequently closes the scene, it has generally risen from the great irritability of their nerves, and violence of the disease under which they have laboured. On the other hand, should it be granted, that the convulsions of children are generally symptomatic, infants may, nevertheless, be said to die of them more frequently than certain authors have allowed ; for where a disease is disposed to produce some violent convulsion, that, though a mere symptom, may carry off the patient : and as it may sometimes be prevented or removed, by its proper remedies, (the disease which occasioned it being at the same time properly treated,) infants may often be recovered, who would otherwise expire in a convulsion fit.

Such original cause may be a rash, improperly repelled ; but the source of fits is much oftener seated in the gums, in the time of teething ; or in the first passages, where some undigested matter, or merely pent-up wind, irritates the coats of the intestines, and produces irregular motions throughout the whole nervous system. Zimmerman* relates an instance of this kind, of a child who, during the first months of its life, had frequent attacks of violent convulsions, which disappeared entirely upon the prohibition of meal pap. Indeed, too much caution can scarcely be given on this head, thick victuals being a very frequent occasion of convulsions in young children. Many infants can bear no kind of thickening in their food ; any sort of bread, rusk, &c., disordering their bowels, by occasioning their contents to turn pasty, and cleave to the coats of the intestines, whereby a due absorption of the nutritious part of the aliment is prevented, so that children, in the daily habit of taking sufficient food, are nevertheless emaciated. Weak and tender as they are, they in this state require repeated purges, especially of castor oil, with some light cordial on the intermediate days, and a total abstinence from farinaceous food. For such children, veal tea, mixed with milk, is amongst the most innocent and nutritious. Any offensive load, whether from too great a quantity, or bad qua-

* Acta Societatis Zynick, vol. ii.

lity of the food, by occasioning a faulty secretion, must act like a poison; and that the convulsions are owing to this cause, may often be known by the complaints that have preceded them, such as loathings, costiveness, purging, pale countenance, large belly, and disturbed sleep. If the child is two or three years old, any load at the stomach may be more readily discovered; the tongue will be foul, the skin hot, and the pulse quick and weak.

Any matter capable of irritating the nervous system, will induce symptomatic convulsions in some infants, whilst others will withstand a great deal. For such habits as the former, the cold bath will sometimes be found a good preventive. Every young infant is, however, more or less, predisposed to this complaint; and the disposition continues throughout childhood, in proportion to the tender age, and delicacy of the habit. The younger and more irritable, therefore, an infant may be, so much the more liable it will be to the symptomatic convulsion, especially from any considerable disturbance in the first passages, as was mentioned before; particularly the bad quality, or over-thickness of the breast-milk, or other food; and from frights of the wet-nurse. Of this I remember a remarkable instance in a patient of my own, in whose house a visitor suddenly dropped down dead. The mother of the child, which was six months old, was exceedingly alarmed; but her attention being for a moment called off by its crying, she incautiously put it to her breast. It was not an hour afterwards that the infant was seized with a fit, and lay either convulsed or comatose, without so much as taking the breast, for the space of six-and-thirty hours; though it was at length happily recovered.

Among the various causes of convulsions, (though equally the occasion of many other complaints,) may be mentioned that of foul air, and want of cleanliness in the dress, and other accommodations of infants; against which, the lower class of people cannot be cautioned too often, or too earnestly. Such a source of convulsions has been peculiarly exemplified in a disorder whose attack being within the first nine days after birth, has been denominated the nine-days' disease.

Readers desirous of a full account of it, are referred to a paper by Dr. Clarke, of Dublin, published in the Transactions of the Royal Irish Academy, for the year 1789, by which it appears that Dr. Clarke considered it as altogether an endemic in the Dublin Lying-in Hospital, where it raged for many years, and carried off some thousand children. But after a while the Doctor was led to think the disorder might probably be entirely owing to bad air, and want of cleanliness; he was therefore at great pains to remedy these local defects, and thereby prevented these very frequent attacks of a disease, which, under the former circumstances, none of the physicians had been able to cure, in a single instance. Of the like kind, possibly, was the following somewhat curious case.

An infant was seized with fits when scarcely a fortnight old, and had many severe ones for three days; when, the attacks becoming still more frequent, I was desired to see it. The child was suckled by its mother; but she being very feeble, and having a little fever at the time, her milk was diminished; which occasioned the child to be fed with bread victuals, especially in the night. This I directed to be changed for cow's milk and gruel: and in a day or two a wet-nurse was taken to assist the mother in suckling; who, in consequence of getting rest, was soon able to nourish her infant entirely.

The child's stools being thick and pasty, castor oil, and afterwards calomel, were given repeatedly, and the fits became less frequent. In a few days, however, they again became numerous, and afterwards increased to twenty and thirty in twenty-four hours, and some of them were very violent. When the infant was five weeks old, the fits became almost constant; so that, except an hour or two at a time, when the child was sleeping, it was seldom five minutes out of a fit; some of the paroxysms were long, and the infant recovered from them in a kind of struggle, as if it were suffocating; but the greater number were short and slight.

Almost every medicine that I have ever thought useful in fits, was carefully administered for full five weeks that I attended statedly once or oftener every day: particularly oil of amber, musk, and laudanum, were given very freely; and

seemed at first to be useful, except that the latter no otherwise abated the fits, than by procuring sleep, from which, however, the child often awoke in a convulsion. Leeches at this time were applied to the temples, and a blister in the direction of the longitudinal sinus.

Every means appearing to be in vain, all medicine was given up during the last week of my attendance, except when necessary to obviate costiveness; but the fits continued exactly the same, and the infant, in a very emaciated state, was expected to expire from one hour to another.

The curious part of this case is, that when the child was eight weeks old, it was taken two or three miles into the country, at a time that its fits were almost constant. It left town in the evening, and had many fits the ensuing night; but the next day had only two, and from this time they ceased entirely, without recurring to the use of any medicine.

This sudden change, and speedy entire recovery, can only be attributed, I imagine, to a change of air; which is the more probable, because the infant was removed from a bad one, the child's parents keeping a liquor-house, the lower parts of which had always a very strong and disagreeable smell of ardent spirit. The mother, however, had borne other children in the same house, none of whom had any kind of fit. May it not seem probable, that though such an unwholesome air might not be sufficient to induce convulsions in a healthy child; yet the habit being once formed, such an atmosphere might keep it up in a debilitated infant?*

Another peculiarity may be noticed in this place, that in

* In another part of Dr. Underwood's Treatise, the following paragraph respecting this child was inserted: "After this child's health was fully restored, and it was thriving well, it was suddenly seized with a kind of spasm on the chest, and died in two or three seconds of time, in the bar-room of the liquor-shop in which its parents resided."† And Dr. Underwood, in commenting upon it, considered that this case illustrates an observation of Moschion, who directs, that children shall not be exposed to strong odours of any kind, believing them to be always injurious to infants.—S. M.

[† Compare with an observation of Dr. Marsh, Trans. of the Col. of Phys. in Ireland, vol. v. p. 611. In this case reiterated attacks of spasm of the glottis were induced by reiterated exposure to the atmosphere of a room newly painted.—M. H.]

some instances of the severest convulsions, one side of the body has been much more affected than the other; and from which some affection of the head is justly suspected, whether primarily or otherwise; therefore bleeding with leeches, and afterwards the application of a blister to the head on the side most affected, has appeared to be useful.

The cure of every kind of convulsion will consist, principally, in removing the exciting causes, which must, therefore, be inquired into. If from improper food and indigestion, a gentle emetic should be given. If the irritation be in the bowels, whatever will carry down their acrid contents will cure the convulsions, if administered in time; and we ought generally to begin with a clyster. If the stools appear very foul after common purges, (in which case there will frequently be some difficulty of breathing,) a few grains of the *pulv. è scammon. cum calomel.*, may be given with great propriety; but if the disposition to convulsions continues, after the bowels have been properly cleansed, and no new irritation of them may be apprehended, anti-spasmodics should be administered;* such as *tinctura fuliginis*, *castor*, *spir. cornu cervi*, *ol. succini rectific.*, a drop or two of *tinct. opii*, or *tinct. hyoscyami*, or of *ol. rutæ*; which, though an obsolete medicine, is a very excellent one; as likewise, in some instances, is the *aq. kali*, as advised by Dr. Hargens of Kiel: but to begin with such remedies, as is sometimes done, is as hazardous as it is empirical.

* I speak from my own experience of the efficacy of such remedies, and it may not be amiss to observe, that Harris, who is extremely cautious of giving heating medicines to infants, speaks favourably of some of these.—“*Usus horum (says he) haud prorsus improbandus est, vel in tenellis; nempe quia acidum absorbendi facultate excellunt. Verum summâ cautione,*” &c. — Great caution is certainly necessary in regard to every medicine prescribed for infants, and especially for those of a heating quality; nevertheless, it may be repeated, that in proportion as the disorders of infants become more attended to, I doubt not, it will appear that, in this country at least, cordial and volatile medicines are frequently both more expedient and useful than many people have imagined.†

† This opinion of the advantage to be expected from cordial and volatile medicines, seems to be advanced with less limitation than is to be wished. In some of the diseases of infants, especially such as are dependent upon what is called a leucophlegmatic temperament, cordials and volatiles may be required; but in the great majority of infants' diseases, cordials, particularly at the commencement of the complaint, would often prove very injurious.—S. M.

The continuance of the convulsions here treated of, frequently depends on the debilitated state, or tender age of the infant. The oil seems to act by invigorating and restoring a due tone to the alimentary canal, the grand spring of good health. A remedy less common than those above-mentioned, but in some instances given with the best effect, is the *zinci sulphas*. This administered in a proper dose usually acts as an emetic, and if it should, must be continued afterwards in smaller doses. Rubbing the spine, the ribs, palms of the hands, and soles of the feet, with *oleum succini* or the *aqua ammoniæ*, has likewise had a good effect; as well as frictions over the whole body; which, from the consent of parts, seems to afford more benefit than might be imagined.—A very common cause of recurring convulsions, has been said to be worms; and where no other probable one may appear, this ought to be suspected: the cure will then depend on the proper treatment of that complaint, the symptoms of which have been already sufficiently pointed out.

Should the convulsions arise from the disappearance of a rash, or of a discharge behind the ears, the warm bath, blisters, gentle purges, or a few drops of the *spiritus ammoniæ comp.* joined with *sal. succini*, will be proper remedies. But when the cause is unknown, as the approach of small-pox, measles, or other eruptive complaints, bathing the feet in warm water, and throwing up a clyster, are the safest means. If from teething, after gentle evacuations, and other means directed under that head, blisters, *oleum rutæ*, laudanum, or the *spiritus ætheris vitriolici comp.* and especially lancing the gums, are the grand remedies. With respect to the last mentioned, it may not be improper in this place, to repeat some of the directions for doing this most salutary operation* more effectually than it usually is, especially in the case of convulsions. It is pretty well known, indeed, that it is not sufficient to cut down boldly to the tooth, and liberate it in every part; nor merely to free all such teeth as are manifestly making their way; but that others also must not be overlooked, which, though less evi-

* See the chapter on Teething.

dently, have oftentimes a share in the mischief: but that which I would here also insist upon, is, to repeat the operation frequently, till either the teeth make their way, or the convulsions disappear. And as no harm can arise from the repetition, I wish to enforce the idea very strongly, in every instance, where teething is regarded as the cause of convulsions; a perfect cure for very obstinate fits being sometimes effected by lancing the gums for five or six days successively. The obvious reason of this direction is, that the divided parts often tumefy, or heal up again, and give rise to sufficient irritation, in certain habits, to keep up convulsions, which, on the other hand, yield upon securing the nervous parts from fresh irritation occasioned by the continued protusion of the teeth. In this view it will sometimes be proper to lance the gum across, as for the double teeth, suggested by Mr. Ware in the case of ophthalmia occasioned by difficult dentition.

When repeated convulsions, connected with some disorder in the first passages, and recurring for several months, withstand all the above means of cure, and are suspected to arise from some fault in the brain, they will sometimes disappear of themselves as the infant gets older. At other times, the appearance of some other complaint has put an end to the convulsions; and, not unfrequently, changing the wet nurse, and sometimes even weaning the children when six or eight months old, has evidently removed the complaint.

If convulsions come on without any of the preceding symptoms, they have been generally concluded to be a primary disease, and to proceed immediately from the brain. Some derivation from the head is therefore to be attempted, by bleeding with the lancet, if the child seems able to bear it; or by leeches behind the ears, on the temples, or inside of the arms; by blisters; purging; bathing the feet in warm water; friction of the legs, and rubbing the soles of the feet with *aqua ammoniæ*. If children of two or three years old are subject to slight and frequent fits, issues or setons should be made between the shoulders, or in the neck, and be kept open for a length of time: and in weakly children chalybeate waters may be useful.

The idiopathic convulsion, if not removed in a few days, is that from which future bad consequences may sometimes be expected, being followed by a temporary loss either of the sight, or hearing, and sometimes of the intellects. In this case the child has an unmeaning countenance, and a constant stare and motion of the eyes. If water in the head be not particularly suspected, and the common nervous medicines, with purges and blisters, have had no good effect, bleeding * with leeches, and repeated emetics should be had recourse to; and if the bowels continue in a good state, the *aqua kali ppt.* as a diuretic, may be made trial of.

Such are the usual remedies to which recourse has been had for the idiopathic convulsion; but of late years I have been led to make trial of musk; and from no small success, think I am warranted in strongly recommending it to the notice of physicians. And I am the rather led to this, because I conceive it to have been long out of repute as a remedy for children, and probably one that has never had a proper trial in their nervous affections; as in that case, we should expect it would have been noticed more particularly by the older writers.† In some of the worst cases, however, of long-continued convulsions and fits, apparently truly epileptic, not to be attributed to the usual causes of infantile irritation, as well as where all the customary remedies have been previously and unsuccessfully tried, a free exhibition of musk has restored children to health. And this not only where the long continuance of the fits has led good physicians to pronounce them

* Bleeding should rather precede than follow these remedies, since there is a much greater probability of relief from blood-letting in the early, than in the after stages of this complaint. Drawing blood by cupping-glasses is generally preferable to the application of leeches.—S. M.

† It is not my intention, however, to assert that musk has, at no time, been frequently administered in these cases; though it is probable, not very lately. I am not ignorant that many valuable medicines have long been neglected, in favour of others of the same class, and been taken up again at a future age. Practitioners nevertheless ought to state what has been their own experience of any medicine, in preference to others, after a fair trial of several, in particular complaints. Dr. W. Heberden, however, though he acknowledges this drug to be frequently useful, conceives I have extolled it too much; but if I have spoken from personal experience, it is hoped I may be justified in stating it.

idiopathic; but where the convulsions have also induced total blindness, or otherwise deranged the faculties, for several months. At least, I may assert that an immediate abatement of the fits has followed the exhibition of this medicine, and, in the end, the removal of all ill consequences.

But when the idiopathic convulsion attacks very young children, it generally terminates very soon, sometimes, indeed, instantly; and in many is fatal before any means can be made use of, especially in the case of hydrocephalus. I have, however, often imagined, that we are frequently mistaken in regard to such hasty deaths, and that when convulsions prove so suddenly fatal, they are more commonly symptomatic, and are occasioned much oftener than is suspected by over-feeding. I have known some of the largest and finest infants I have ever seen, die suddenly within the month, immediately after the nurse had boasted of their having eaten *three boats full of victuals!!!*

In this view of the disease, a few words more may not be wholly unnecessary, especially as they will hold out much comfort in regard to this alarming complaint; by which, I am, however, assured, many infants have perished merely from its not being properly distinguished. For though, indeed, all convulsion fits are in their appearance exceedingly alarming, yet under proper treatment they are much less frequently fatal than is commonly imagined, however often they may recur;* neither is the frequency of their return during infancy, nor the long continuance of such a disposition, an indication of future evils, if the fits themselves be of the kind here supposed.† But though experience warrants my speaking with confidence on this head, with a view to prevent any unnecessary distress, yet would I by no means put the practitioner off his guard; since the recovery, in many cases, de-

* The account in the yearly bills of mortality is especially erroneous in regard to this complaint, and has, perhaps, added to the alarm which the appearance of a convulsion universally occasions.

† The above observation is, I believe, strictly true in regard to such kind of fits; and though in some others, as hinted before, the intellects have appeared afterwards to be impaired, yet are the instances so very few, that there is, upon the whole, little ground for alarm with respect to such consequences.

pende so entirely upon an expeditious use of the remedy, that even the time lost in sending abroad for a remedy may be fatal to the infant.

Fits of this kind are, indeed, pretty generally known to arise from irritating matter confined in the first passages, as has been already explained; but I believe it is not so generally understood, how often such matters are lodged in the stomach, (perhaps the pylorus itself,) or *very low down* in the rectum. Instances of the latter are not wanting, wherein the hardened fæces have lain so low, as to dilate the sphincter and sufficiently to expose them to view, and yet the infant been dead before a clyster could be procured from a neighbouring apothecary's; whereas such fits cease immediately after a plentiful evacuation from the bowels, artificially induced: so also have I seen an infant within the month, lying torpid for an hour together in a kind of fit, and apparently in the very article of death, brought out of it entirely, after a large and spontaneous discharge of thick fæces. In like manner sudden death has taken place when the load has been in the stomach; whilst other children have been saved by spontaneously throwing it up. Whether, in the former case, the noxious irritation be in the rectum, which may possibly be doubted, or, from the obstruction there, acrid matter be confined higher up, is not of any particular importance; the confined fæces below, and their timely removal, being, in either instance, the certain occasion and remedy of the evil.

After what has been said, it would be scarcely necessary to point out the remedies in a formal way, but for the sake of directing the most expeditious manner of applying them. In the first instance, the obvious means are a soap clyster, with two or more tea-spoonfuls of salt, (such articles being always at hand,) and afterwards administering one or other of the purges formerly directed; which it may often be necessary to repeat for some days, perhaps with an interval between. But when an infant falls suddenly into a convulsion very soon after sucking or feeding, especially if on any thing actually improper, and the bowels have been for some days in an orderly state, it may reasonably be presumed that the irritation

is in the stomach, especially if there be an unusual paleness of the countenance, indicating sickness; or, on the contrary, any considerable blackness, with symptoms of suffocation; which I think do not come so soon when the obstruction is in the bowels. It should here also be remarked, that it is not necessary, that the load in the stomach should be considerable in quantity in order to induce such sudden and alarming convulsions; it is sufficient that the stomach be really oppressed by it to a certain degree; nor does it always appear to arise so much from an oppressive abundance, as from a small piece of undigested food, irritating, and perhaps confined in, the pylorus.

In the case here described, it would be improper to think of a formal emetic, at least without making trial of some more expeditious means; such as irritating the pharynx with the finger, or a feather; or forcing in the smoke of tobacco, if that be at hand: the last of which should, however, be cautiously used; but it often instantly produces vomiting, and puts an end to the fit. To this end, the child should be supported by a hand, placed under its stomach and belly, whilst the feather or other means are made use of; in which position the child will be made to vomit more readily, and with less straining, than in any other.—It is hoped that the importance of the subject, as well as the very frequent success attending the plans last recommended, under the most alarming appearances, may be thought an apology for the length of this chapter, as well as the sort of repetitions made use of.

It is further to be noted, that symptomatic convulsions are sometimes the effect of a salutary effort of nature, to produce a crisis in some disease the child labours under; in which case great caution should be used not to be over officious: bathing the feet in warm water, however, as mentioned before, will be perfectly safe, and generally useful.—Having spoken of opiates, I shall just observe, that though they are often very serviceable, when judiciously prescribed, they become very hurtful if improperly administered. They will, however, always be safe, where convulsions continue after the first ex-

citing cause has been removed; or where the convulsions are so violent as to become an obstacle to administering proper remedies; or when the original complaint is of a spasmodic nature; and, perhaps, particularly where the hands are constantly clinched, and the thumbs drawn down; in which case, (after properly cleansing the *primæ vitæ*) infants will often be benefited by large and repeated doses. When the disease arises from debility and languor, the *tinct. valer. volat.* administered in some generous white-wine, has been found a successful remedy. Amongst the latter remedies, fixed alkalies, particularly the carbonates of soda and potassa, have been recommended, and sometimes the volatile alkali, and it should seem with success.

When convulsions occur many times in a day, it is of importance to attend to the distance of the paroxysms; from which a much better indication may be had of their immediate danger, than from the forcible contraction of the muscles during the fit. For, where the intervals are short, though the fit itself be not long, nor violent, the disease is generally more dangerous than where severe paroxysms are attended with long intervals.

[Instead of the division of convulsions into the idiopathic and symptomatic, I would propose that they should be viewed as resulting from disease of the nervous centres, or in parts eccentric in the nervous system.

The former class would comprise all diseases of the brain and spinal marrow, complicated with convulsion.

The latter, all those convulsive diseases which arise from teething, indigestion, and deranged bowels, and which probably act through the fifth pair, the eighth pair, and the spinal nerves respectively, and constitute a part of a more comprehensive class of diseases, embracing affections of a series of nerves of what I have designated the reflex function.—M. H.]

PARALYSIS, OR PALSY.

Paralysis is a more common disorder in infants and young children than writers seem to have imagined: it is confined to

no age, (having been seen as early as the third day after birth,) and attacks children in very different degrees, in the manner it does adult persons. It, accordingly, sometimes seizes the upper, and sometimes the lower, extremities; in some instances it takes away the entire use of the limbs it has attacked, and in others, only weakens them. Sometimes the speech is very much affected, and at others not at all; the intellect is also greatly impaired in some instances, and in others is only torpid; for though children may be dull and heavy, like other paralytics, yet when roused, their imagination is found to be fully awake to the common objects around them.

The palsy more commonly appears in the form of hemiplegia; but if it be neither fatal, nor soon cured, it is often found to steal imperceptibly upon the other side of the body. In one instance I was witness to the paralytic affection quitting one side, to seize the other, only two days before the child died.

In any case the treatment of palsy is much the same in young subjects as in adults; and being usually attended with costiveness, calls for brisk purges in the first instance, and a repetition of opening medicines throughout the course of the complaint. And, indeed, if cathartics and blisters do not soon afford relief, the disorder usually becomes chronic, and the child sinks gradually in the course of a few months, or drags on a miserable life for ten or twelve years, with more or less debility of the arms and legs; but very rarely arrives at manhood. Indeed, the causes of palsy, particularly in young people, who are still growing, are so numerous, and are often so entirely out of the reach of art, as well from their nature as their seat, being frequently in the nerves themselves, or the brain, that such an event cannot be wondered at.

But where no morbid change of parts has taken place, perhaps infants and young children are oftener perfectly cured than those more advanced in years, by the mere exhibition of two or three brisk purges, whereof calomel often forms a necessary part, as the palsy frequently originates from foul matters in the first passages. After purging, blisters should

be applied, and if no fever attends, nervous medicines be administered, such as valerian, castor, *ammonia præparata*, and the *spiritus ætheris vitriolici compositus*. In some instances the bark and steel have proved useful; or frictions with flannel and aromatics, or æther, and the use of the waters at Bath; and as frequently as any other mean, electricity, especially, if instead of giving shocks, the electric aura only be applied, or sparks drawn from the body, seated in the insulating chair. In regard to electricity, it has been thought that it is much more likely to succeed, if had recourse to previous to the application of blisters. If the head should be much affected, a small blister, or leeches applied to the temples, may be proper in certain habits.

[When the palsy becomes chronic, more general remedies will be called for, according to the particular symptoms that may occur; but more commonly, remedies of the warmer class.

The palsy is sometimes occasioned or succeeded by water in the head; and in the former case the sutures of the skull being generally still open, and allowing of distension, the symptoms of compressed brain will not appear so soon as they otherwise would. In the suspicion of hydrocephalus, mercury and diuretic medicines may be made use of; though, it is to be feared, with but little prospect of success, when the original disease has proceeded thus far.

I have noticed a few instances of a partial paralysis of one, or all the extremities; but this has always given way very soon. Besides teething infants, whom it has been said to attack, I have seen it in others who are older, and the finest children, and it is then generally attended with a foul state of the bowels. In any case, the only remedies I have found necessary have been calomel, or some other purgative; sometimes an emetic, aromatics, and bitters, and volatile embrocation to the limbs. Electricity has been advised; and if the complaint should not otherwise yield, may as properly be had recourse to in this, as the former instances. If these means should fail, the whole course of the spine should be carefully examined; and if any curvature be discovered, recourse must be had to

one or other of the means recommended for the paralysis of the lower extremities; and it may be remarked here, that the seat of the disease, having been high up in the neck, close to the head, has sometimes been overlooked.

We have scarcely ever met with paralysis of any duration in children, except in consequence of cerebral disease. Temporary paralysis of one or both the lower extremities is by no means uncommon. The child, on rising in the morning, will be unable to put its feet to the ground, or more commonly, cannot stand when placed on its feet; one leg will be drawn up, both the hip and knee-joints being slightly bent; the toes pointed to the ground, so as to give rise to the supposition that the hip-joint is diseased. In other cases the child will limp only, bending itself forward, and will mostly cry if you attempt to straighten the limb. The spine, in some cases, has been suspected of being diseased; now and then it occurs in younger children, or before they can walk. A careful examination when undressed, and the absence of all collateral symptoms, will usually indicate the source of the malady and right mode of treatment. This consists of a brisk purgative or two, followed by a course of alterative aperients, the tepid bath and a carefully regulated diet.

We may here mention a very interesting and, we believe, very unusual case, which was followed by confirmed paralysis of the shoulder joint. A remarkably fine boy of five years old was sent from home to a friend's house on account of the illness and subsequent death of his mother. He was brought to us by Mr. Graham, of Turnham Green, with whom we had attended his mother; the paralysis had then existed some weeks. On the child's being stripped, the humerus appeared subluxated. You might place your finger between the acromion and the head of the humerus. The child said that he had fallen out of bed; but there was no evidence of his having done so, neither had the shoulder ever been dislocated; but he had dreamed in the night that he had had a fall; in the morning he awoke with fever, for which he was well purged, &c. The fever was relieved, but the arm was discovered to be paralyzed. We consulted with Sir Astley Cooper, who was quite

conversant with the kind of case, and gave an unfavourable prognosis.

Friction, electricity, working by pullies, &c. &c. were tried unsuccessfully. The boy was in rude and excellent health, so that he could drag a heavy garden-roller about with his arm, but was quite powerless with the shoulder-joint.—H. D.]

SKIN-BOUND.

This being a spasmodic affection, and sometimes attended with tetanus, may be here noticed, as introductory to that convulsion. It is a disorder but little known either to ancient or modern writers, and has been less understood, being only twice publicly noticed, that I know of, until a few years ago. The one, at the beginning of the last century, in a still-born infant, in the hospital at Stockholm, and the other about forty years ago, in a Neapolitan girl of seventeen years of age, in the Royal Hospital at Naples; the successful treatment of whom, I think, may throw some light on this disease, hitherto so little known. The former is accurately described by Uzenbezius, and recorded in Schurigii Embryologia (*de fœtu frigido et rigido*,*) but without adverting at all to its treatment. The case, as I since find, is transcribed into the Ephemerid. Academ. Naturæ Curiosor. Cent. ix.

The above is related in a manner importing it to be an uncommon occurrence, and the disease at that time little, if at all, known; and though recorded in two distinct works, (the latter of which is rather consulted than regularly perused,) the case seems to have been generally overlooked, and consequently the true nature of the disease remained nearly in its original obscurity. It was, indeed, not till a twelvemonth after my short account of it appeared, that this disorder began to engage the attention of the French physicians, in consequence of Monsieur Andrij being called upon to take the charge of the Hospice des Enfants Trouvés, at Paris. The

* The midwife is reported to have said, that this infant, though born alive, felt as intensely cold and rigid when it came into the world as a piece of ice. How this might be, I leave to the academy of the curious to determine.

disease, indeed, had been often seen both in that hospital and the Hôtel Dieu, but having always proved fatal, little attention had been for a long time paid to it, till Dr. Andrij was elected physician to the first-mentioned charity, since which time no pains seem to have been spared in the investigation of it; and the subject having since been taken up by the Royal Society of Medicine, it is hoped additional light will be thrown upon it.

That the present account of the disease may be clearly stated, I shall first consider it as it has appeared in this country, in the manner I had long ago intended, and had actually drawn up, before I was favoured with some further description of it by Dr. Andrij.

It has, indeed, been much less common in this kingdom than on the continent, but is equally an hospital disease, and seldom met with but accompanied with some bowel complaint, and still more rarely appearing at the birth. It was first spoken of in public, I believe, by my friend Dr. Denman, when a teacher of midwifery, and physician to the Middlesex Hospital; whose unwearied attention to it there, though not with all the desired effect, does him more honour than could have been derived from the most successful treatment of a disease less fatal than this has proved, wherever it has appeared. The British Lying-in Hospital has been very little infested with it; possibly, by being solely appropriated to the reception of pregnant women, which the Middlesex* is not, the air may, on that account, be more pure and salutary.

"The following symptoms (Dr. Denman observes) have been considered as pathognomic, or characteristic of the disease :

1st. The skin is always of a yellowish white colour, giving the idea of soft wax.

2d. The feel of the skin and flesh is hard and resisting, but not œdematous.†

* Since this was written, the reception of lying-in women into the Middlesex Hospital has been altogether discontinued.—S. M.

† To me the appearance and feel of the skin have exactly resembled that of a person who has died during a very hard frost.

3d. The cellular membrane is fixed in such a manner, that the skin will not slide over the subjacent muscles; not even on the back of the hands, where it is usually very loose and pliable.

4th. This stricture often extends over the whole body; but the skin is peculiarly rigid in the parts about the face, and on the extremities.

5th. The child is always cold.

6th. The infant makes a peculiar kind of moaning noise, which is often very feeble, and never cries like other children.

7th. Whatever number of days such children may survive, they always have the appearance of being dying."

This disorder commences at no regular period, unless where it appears as an original disease, and in that case more commonly within the first ten days after birth: a few children, it has been said, have been born with it, and such have never survived many days. Whenever it takes place, it attacks several infants within a short time, and chiefly those who may be in the last stage of obstinate bowel complaints, in which the stools are of a waxy or clayey consistence.

I have seen the rigidity extending beyond the cellular membrane, so as to affect the muscles, but only those of the lower jaw, which became perfectly rigid; but this spasm, or tetanus, does not seem to be a frequent symptom, nor do convulsions extend to the extremities, as they are found to do in France; nor have I discovered any extravasation in the cellular membrane after death, reported to be constantly met with in that country. Moreover, in no instance, that I have heard of, has the disease been attended with the erysipelatous affections uniformly noticed there.

The cause of this dreadful complaint, when either congenite, or evidently supervenient to disorders of the first passages, seems to me to be a spasm depending very much upon a certain morbid state of those parts, and with which the skin is well known to have a peculiar sympathy. But when, though an original disease, it does not take place till some days after birth, (which, I believe, is rarely the case except in large hos-

pitals, and other crowded apartments,) the irritating cause, in such instances, is probably seated in the sebaceous glands; and the disease seems to be an endemic of certain seasons, arising from that unwholesome air to which such places are peculiarly liable.

The means of cure in this country, (where, it has been said, the disorder is more simple,) have been different from those that have lately been found successful in France; but instances of recovery have been very few in either. When the disorder was first noticed, its treatment was confined to a strict attention to the state of the bowels, and rendering the several medicines very warm by means of the compound spirit of ammonia, which was administered every four or six hours; and was the only plan attended with any success. Together with this, I after some time directed the frequent use of a warm bath, and chafing the whole body afterwards with warm flannel; means which have since appeared to have been attended with the first instances of success in France, as will be noticed below.

As the disease raging so much in France differs in many respects from ours, it is very doubtful how far the plan of cure adopted there may be applicable in this country, and my own experience has hitherto not gone beyond the means I have mentioned; but I would venture to suggest that, in many cases, trial might be safely and properly made, not only of carminative clysters, but also of a grain of calomel, previous to the infant being put into a vapour bath; and after a sufficient number of stools shall have been procured by these means, exhibiting other volatile and cordial remedies, besides the spirit of ammonia, as well as antispasmodics of different kinds.

After the description given of this disorder as it appears in London, little more will be necessary, I apprehend, than to select the circumstances in which that in France is found to differ. It has already been said, that it is more frequently attended with tetanus, and never occurs without those appearances mentioned under the article Erysipelas Infantile, especially the redness and hardness about the pubes, accompanied further with

tumour, and redness of the soles of the feet. But these parts, it seems, though of a purple red, are intensely cold; very rarely suppurate, but sometimes mortify.* In one instance, however, the infant was not cold,† but, on the contrary, exceedingly hot. The legs, thighs, and soles of the feet were red and hard; but no mention being made of a *general* tightness of the skin, it is probable this child was affected only with the infantile erysipelas which appears amongst us.

Besides the above variations, the infants are said to swallow with extreme pain; the extremities, especially the legs, are much enlarged, and attended with a serous effusion in the cellular membrane, which we have not hitherto noticed; and the disorder is said to rage most in the hotter months. One instance, however, of difficulty of swallowing, fell under my notice; the child, at least, refused the breast, and swallowed unwillingly whatever was offered it; but this infant scarcely survived the attack fifteen hours. In France, it is further observed, that the infants die about the third or fourth day, or at furthest, on the seventh from the birth. It is probable there is another and very material variation in respect to the degree of stricture and immobility of the skin, which is not clearly expressed to be either so considerable or extensive, as in the disease I have been describing, but is more confined to those parts which become red and tumid. But in the instance recorded by Schurigius it was clearly otherwise, the infant being said to feel, from head to foot, like a piece of flesh dried in the smoke. This child survived a complete day, during which time it took no sort of nourishment, and never cried, nor made any kind of noise.

Upon examining a great number of dead bodies at the *Enfans Trouvés*, the serous extravasation is constantly met with; is of a deep yellow colour, and fluid, but coagulates with heat;

* This is said to be the case in four or five children out of twenty, all of whom are found to die in a few hours after the gangrene has taken place; and become so putrid, that by the next day the skin separates from every part of the body, so as to adhere to the hands of those who have occasion to touch them.

† One instance of this kind also occurred at the British Lying-in Hospital; and in this case there was likewise tumour, hardness, and redness about the pubes, and different parts of the extremities.

the fat is peculiarly solid; the glands and lymphatics, especially those of the mesentery, are found stuffed, and the liver uncommonly large, with a great quantity of deep-coloured bile in the gall-bladder; and the lungs are said to be loaded with blood, as well as to contain an unusual quantity of air.

The cause of this disease amongst them seems to me but ill accounted for; the complaint being attributed to the improper diet of the mother or her infant, or to cold which it has taken at the birth; whereas the coldness and rigidity of the skin seem to me but mere symptoms, and not the disease; especially as their children, like ours, are but rarely attacked from the birth. The disease appears to be a true endemic, arising from foul air, especially as it is found only to attack the poor, and particularly to infest the two large hospitals that are crowded above all others, and receive the lowest and most wretched part of them, of whose new-born children, it is supposed, one out of twenty is visited with this disease.

It has been hinted that, for a long while, little attention was paid to this complaint, on account of its constant fatality, six hundred infants sinking under it every year, in a single hospital, about four hundred of which are born in the Hotel Dieu. But since Dr. Andrij's election to the Hospice des Enfants Trouvés, various means have been attempted, both by himself and his colleague, Mr. Auvety; and amongst other means, the warm bath, which appears to have saved the first child that was known to recover. Trial has since been made of blisters to the extremities, which succeeded also in the very first instance, as well as since in several others; so that in the last year they are reported to have saved five infants out of every hundred more than in the preceding one.

Monsieur Souville, surgeon to the Military Hospital at Calais, has also given some account of this disease in the *Journal de Médecine*, under the name of *Ædématie Concrète*, and observes, that it is a very common disorder in the provinces as well as in Paris. Under his direction, likewise, a warm, or rather vapour bath, succeeded in the only instance wherein he had made trial of it.

And this part of the treatment agrees with the account of the Neapolitan girl to which I have alluded, as well as with the result of our further experience at the British Lying-in Hospital, where, however, in one instance, the warm bath was thought to hasten the death of the infant.

The former was read before the Royal Society, May 16th, 1754. The disease was in this young woman exceedingly severe, the skin being so very rigid over the whole body, from head to foot, that she could scarcely move her eyelids, or open her mouth; nor could she move any of her limbs without pain, as well as difficulty, though the rigidity was evidently in the skin and adipose membrane, and not in the muscles.

It may be sufficient to say, that the patient recovered, but not under a twelvemonth. The means had recourse to were the warm and vapour bath, mercury, sarsaparilla, and friction of the skin. The warm bath gave her so great pain (as it was supposed, from the weight of the fluid) that, after a few trials, she fell into convulsions, through her dread of it, as they were about to put her into it. But the warm vapour very soon afforded relief by relaxing the skin, yet very little or no perspiration was produced; nor had she ever had the least from the commencement of the disease; but it was after the vapour bath considerably promoted by the internal exhibition of twelve grains of quicksilver every day, with a decoction of sarsaparilla, assisted by constant warm air, and frictions of the limbs.

How far any part, or the whole of this treatment, may be successful in infants, to whom the complaint seems to be confined in this country, experience only can prove; but it is presumed that the means are worthy of trial.

TETANUS, OR LOCKED-JAW.

The Tetanus* of infants is an equally fatal complaint, and in this country nearly as little known as the foregoing. It is

* This is the species which nosologists have termed, *Trismus maxillæ inferioris; rigiditas spastica. Species prima. Trismus nascentium infantum intra duas primas a nativitate septimanas corripiens.*—Vide Cullen. G. lxi.

either idiopathic or symptomatic; which distinction is of more importance in hot climates, where the latter is always found to be incurable. In some instances it has been confined to the jaw only, as in Jamaica; in others, it has been attended with contraction and rigidity of other muscles of the face, and a peculiar fixedness of its features. Sometimes the rigidity has extended to the neck; and in one instance so completely over the whole body, that the limbs of the infant could not be bent so as to place it advantageously in a vessel, somewhat too small, appropriated to a warm bath.

In such instances of Tetanus as I have met with, the attack has not been earlier than the sixth, nor later than the ninth day from the birth,* and as far as I could learn, the infants had not been costive, (which Dr. Evans reports to be usually the case in Jamaica,) nor apparently unhealthy; some, I remember, were remarkably strong and lusty children. It seems somewhat to differ, therefore, from the disease, termed Jaw-fallen, in the West Indies; and in one instance appeared to have some resemblance to the catalepsy. The rigidity has stolen on in a more gradual way in some instances than in others, but has always been very great as far as it extended, from the moment it has been discovered; so that in instances where the mouth has continued sufficiently open to admit my finger, I could not thereby depress the jaw. In some, the eyes have been bloated, and the whole countenance much swollen.

The cause of this complaint has been differently conceived of. Dr. Evans, who has been very conversant with it, attributes it to costiveness, and thinks he has greatly prevented its frequency amongst the negro infants, by purging them from the birth. Dr. Bartram, of Philadelphia,† attributes this fatal disease to a want of swathing, or proper bandage to new-born infants, and to the application of scorched linen to the navel; but his reasoning, to say the least of it, appears to be very in-

* In the West Indies also never later than the ninth day.—(Dr. James Clark.) In France, however, it is said to attack much older children, though rarely after two years of age.—(*Mémoires de la Société Royale de Médecine*, Ann. 1787 and 8.)

† See the Transactions of the College of Physicians at Philadelphia.

conclusive. It has also been attributed to the cord being divided by instruments not sufficiently sharp. But the cause has at length been clearly ascertained, and happily its prevention by Dr. James Clark,* who, perceiving that those houses were free from this disease in which there were no fires, very soon demonstrated it to be owing to the smoke from burning wood, the negro-houses having no chimneys to carry it off.

It does not in this country seem to arise from constipation, or neglect of purging off the meconium, and much less for want of swathing; but is owing (as I have always stated, and has since been demonstrated, as above remarked) to a certain state of the air; and the more so, as the disease appeared only once in the British Lying-in Hospital during a great number of years, and then attacked several infants in a short time.—It has appeared again, however, in six instances since the above account of it was given in former editions. In older children, as in adults, it may arise from various sources of irritation, and particularly from worms; especially, it is said, from a certain species of *tænia*.

The remedies attempted at the hospital were the warm bath; fomentations to the rigid parts; frictions with oil and camphor, and Bates's anodyne balsam; blisters behind the ears, and to the nape of the neck; and assafœtida, opium, calomel, the bark, and aromatic confection, have been given internally. It remains, however, to make trial of more cordial and tonic remedies, as recommended by physicians in North America, where the disease is more common than it is here: such are the *oleum succini*, musk, wine, and the cold bath; though concerning the latter, writers differ, Dr. Clark asserting that it has in no instance succeeded.

One infant, in whom the complaint was confined to the jaw, and who had less rigidity than any of the others, never looked ill, and had no convulsion in its limbs, died rather sooner than the rest, excepting one, which was a remarkably large and healthy infant: this child, after being five minutes in a tepid bath of salt and water, fell into a more profuse sweat

* See his Treatise on the Yellow Fever, &c. 1797.

than I had ever noticed in any young infant, and died in a few hours afterwards, and only twenty-four from the attack. I have known only one child survive the third day, and that was not seized till the ninth from its birth, and at the end of the third week seemed to be recovering; but it had never been able to take the breast after the attack, and died when six weeks old, though, possibly, not altogether from this complaint.

EPILEPTIC FITS.

This and some of the following complaints, as well as the two or three immediately preceding, which relate, some to the more early, and the others to later periods of childhood, are noticed successively in this place, on account of their falling under the general class of convulsions; and it is presumed less improperly, on the whole, than ranking them according to their importance, or the different periods of time in which they might take place. The state of dentition, as so materially connected with nervous affections, will then be considered, which will lead to pyrexia, in the different forms they assume in children.

In regard to epilepsy, very few words, however, may suffice, as it is either pretty easily cured, or usually continues through life, and is too well known to require a particular description. An account of the various precurrent symptoms would be equally useless.—It may merely be noticed, that the patient falls suddenly to the ground, and sometimes without any perceptible warning, or at all sufficient to secure him from injury; and is usually much convulsed, especially on coming out of the fit.

The means of cure must be adapted to the different causes of the complaint. It sometimes takes its rise merely from foul bowels; and certainly more commonly attacks children of a costive habit of body: it should then be treated agreeably to the directions already given in such cases, and especially with active and mercurial purges; after which, the *cortex peruv.*

sulphas zinci, chalybeates, and other tonic remedies, may be serviceable; and especially sea-bathing. In other instances, especially in more advanced life, and towards the time of puberty, the epilepsy seems to be owing rather to a more sensibly nervous irritation. In such cases, blisters to the back of the neck may be useful; and I have experienced much benefit from large doses of the powder of valerian, and from opium; and in one instance, from an infusion of savine, fennel seeds, and juniper berries; but I could never entirely conquer the complaint by these means, when become chronic: but the *oleum succini* has, in several instances, perfected a cure in young subjects; and where that has failed, I have succeeded with musk.

In the worst cases I ever met with, in which the fits were very long and violent, and sometimes to the number of twenty or thirty in a day, and the disorder of many years' standing, electricity has very soon rendered them weaker, reduced their number to three or four in a day, and gradually to one in six weeks; but has not entirely removed them. In such obstinate cases, it is generally supposed that the brain is affected by some local or permanent cause, and a perfect cure is consequently despaired of; though I have known the fits abate greatly after having continued for twenty years, and the subject of them afterwards become the mother of several children. But parturition, as well as whatever else may tend to debilitate the system, I have always found increase the number of the fits for a certain time.

When this disease has attacked children of five or six years of age, and where no treatment has been serviceable, the complaint has very frequently disappeared suddenly about the time of puberty, and sometimes a year or two sooner. Where it does not, it will probably continue through life, and now and then prove suddenly fatal.

Dr. John Wilson, of Spalding, has lately strongly recommended the internal use of the *argentum nitratum*, in doses of gr. ijss. three times a day. And in the Medical and Chirurgical Journal, edited by Professor Hufeland, is an account of a cure effected in a case of three years' standing, by the *cuprum*

ammoniatum, given in the dose of half a grain a day, and increased to five grains daily.

When the patient can foretell the approach of an attack, it has been recommended to exhibit an emetic of blue vitriol, as soon as the patient's feelings announce the approaching paroxysm. The curative powers of the two former of these remedies, however, have been disputed by Dr. J. Magennis, of Plymouth.

In the late Dr. Clarke's last publication on hydrocephalus, inflammations of the brain, and epilepsy, are some good practical observations that ought not to be withheld from the readers of this work. The intervals of the paroxysms, the Doctor observes, may be increased, at least, by a spare diet, and avoiding all animal food and fermented liquors. He also very properly recommends the sleeping with the head very much elevated; early rising; the hair being cut short, and the head being kept cold, and the rest of the body very warm, carefully avoiding its exposure to cold; and a constant free course of the bowels; also setons and issues; the daily use of a tepid bath, from 80 to 94 degrees, at first for five minutes, and gradually to an hour at a time, if it should not relax. He advises ant-acids, where acidity prevails, and often bitters, but forbids steel. Emetics of *zinc. sulph.* with ipecacuanha, he thinks often very useful. In plethoric patients with torpor, cupping or leeches, and V. S. of the jugular veins; he is averse from cold bathings.

Upon examining the brain after death, I have sometimes found water in the ventricles, and at others, a small point of bone, as sharp as a needle, standing out from the internal part of the os frontis, or from the sella turcica, (of which Boerhaave and others have recorded several instances) and which was, doubtless, the true cause of the disease.

[Epilepsy sometimes depends upon disease of the brain or spinal marrow, the *nervous centres*; and sometimes upon sources of irritation distant from them,—as teething, indigestion, constipation. The former are far less curable than

* See Medical and Physical Journal, vol. iv. No. 21.

the latter, and the distinction should be carefully made before the treatment is adopted. In epilepsy of eccentric origin, the removal of the irritation, the regulation of the diet, exercise, hours, and air, and tonic remedies, sometimes succeed in the most satisfactory manner; fits may occur, however, during the general amendment.—M. H.]

CHOREA SANCTI VITI.

I shall be very brief, also, on this untoward disorder, which is equally well known: and though not often fatal, is, like the former, I believe, rarely cured but in young subjects.

Worms, and other foulness of the bowels in children, are frequent causes of this strange convulsion; in which different parts, and especially the extremities, are put into continual motion, giving the patient a very awkward appearance, particularly in his walk.

If the first passages are the seat of irritation, the complaint must be treated in the manner noticed under the preceding article: and indeed, in most cases, the cure should be begun by administering aloetic, or mercurial purges. But should the disorder appear to be owing rather to relaxation, as it sometimes is, the *cortex peruvianus*, chalybeates, and other tonics, especially the sulphate of zinc, and sea bathing, are indicated, and are very frequently successful. I have also known it immediately yield to electricity; but, in this case, it has been attended with other symptoms of palsy, which have come on suddenly. Electricity, also, proved useful in a very extraordinary instance; but the complaint returning, yielded afterwards to a perpetual blister on the os sacrum, directed by Dr. Delarive, of the Public Dispensary. The *pilulæ cupri* were administered at the same time, in the dose of gr. ss; but no benefit was perceived till the blister was applied. Dry-cupping has also been thought useful.

Dr. Hamilton, in his treatise on the disorders of infants, observes, that his father, as well as Dr. Parr, of Exeter, adopted the idea of irritation of the stomach and bowels long continued, producing this disorder in its chronic form; and Dr. Parr has

succeeded in fifty-nine out of sixty cases in the cure of it, by giving repeated and powerful purgatives.

[Dr. Hamilton, of Edinburgh, has recommended the use of purgative medicines in the treatment of Chorea, in his beautiful and philosophical treatise. Dr. Bateman recommends the oxide of iron with rhubarb. Mr. Salter, in a valuable communication in the tenth volume of the Med. Chir. Trans. has detailed the success of the *liquor arsenici*, which a recent case in my own practice, and another in that of Dr. Heming, have recently confirmed. In one case, the cold bath was found useful. I believe the true secret of the cure consists in prudently conjoining the plan of Dr. Hamilton with tonic remedies. —M. H.]

APHONIA SPASMODICA INTERMITTENS, OR TEMPORARY LOSS
OF SPEECH.

This, though an uncommon complaint, sometimes occurs in children between the fourth and seventh years of age. It is a transient loss of speech, and is a harmless affection; for though it may continue for a length of time, I believe it never degenerates into a permanent disease. It is rather a difficulty in articulating, than a perfect loss of speech; lasts only for a few minutes, or at most a quarter of an hour; and recurs frequently in the course of a day. It is thought to be somewhat of the nature of the chorea sancti viti, and to be occasioned by worms, or other irritation of the bowels; and sometimes by teething.

If neither the eruption of teeth, nor the exhibition of mercurial purges, and other remedies for worms, should produce a speedy good effect, any advantage from other medicines is more doubtful; but the long use of the cold bath, or perhaps time only, whereby a child may acquire more strength, may be expected to remove the complaint. It may be proper, however, to make a trial of local applications of a stimulating kind, during the paroxysm, or fit; of which remedies the most innocent is a lump of sugar wetted with lavender drops; and amongst the stonger, a decoction of the pellitory of Spain,

as a lotion to the mouth. Should these remedies do nothing, and the complaint any way increase, it should seem that electricity may be had recourse to with safety and propriety; but the disorder is too rarely met with to have furnished the opportunity of saying much from experience.

[The most severe case of aphonia in a child, which has occurred within my experience, was cured by the daily use of calomel and jalap, with a little *pulv. aromatic.* This procured two or three stools daily, and the course was continued for at least three weeks.—S. M.]

INCUBUS, OR NIGHT-MARE.

It will be sufficient barely to notice this affection, children either outgrowing the complaint altogether, or any occasional return of it, when older, being esteemed rather as constituting an unpleasant moment, than a disease requiring medical treatment.

The incubus, probably, arises from a spasmodic constriction of the diaphragm and muscles of the chest, taking place during sleep, and occasions a sense and dread of suffocation, and of some huge weight lying across the breast. When children, who happen to sleep with a bedfellow, awake under the paroxysm, they are wont to say that their companion has lain with all his weight for a long time across them.

The cause of this complaint seems to be flatulency in the stomach, and indigestion, and it chiefly attacks children or young people of a delicate habit, and such as eat too freely of fruits, and especially such as are unripe, or who are in the habit of eating much supper a short time before going to rest.

The paroxysms are of different duration, some children lying a much longer time in this unpleasant state than others; but in all, some degree of palpitation of the heart, lightness of the head, tremor, anxiety, or lassitude, remains for some time afterwards.

The curative indications are to rouse and fortify. During the fit, volatiles and fetids may be applied to the nostrils; and, as soon as may be, some antispasmodic should be administered internally. Afterwards, clysters, bitter purges, or

emetics should be exhibited, as the state of the first passages may indicate, and the cordial volatile medicines be continued. To these should be added proper stomachics, assisted by a nutritious diet of easy digestion, and cold bathing, if not otherwise improper.

[This affection, or disturbed sleep in children, is strong evidence of deranged digestion, and will generally be relieved by attention to their diet and some mild alterative aperient, as—

R.—Pulv. Rhei., Sodæ sesquicarb. ā ʒj., Syrupi ʒij., Aq. Menth. Pip. ʒxiv. M. Ft. mist.

Of this a dessert or table-spoonful may be taken every night. H. D.]

SINGULTUS, OR HICCOUGH.

This has been ranked among children's diseases, but it is, by no means, a complaint of consequence, as it sometimes is in adults, though it is, indeed, a true convulsion; and may, therefore, be noticed in this place. It occurs very frequently in infancy, but seldom requires much attention; as it more commonly comes on only after over-feeding, or in consequence of the over-thickness or sweetness of the food, and is one of their most harmless consequences; it offers another argument, however, for their prohibition. But when it depends on an acid state of the juices of the stomach, or occurs in long bowel complaints, the testaceous powders should be administered very freely. Should it, however, continue for a length of time, the *emplast. labdani* may be applied to the pit of the stomach.

The hiccough is an affection very incident also to more advanced childhood; but is equally harmless as in infants. It is well known, that it may be generally removed for the time, by any little circumstance that may serve powerfully to divert the child's attention at the moment, in a way of surprise, or otherwise; and it may not be amiss to attempt it whenever the hiccough may return, in order to obviate the influence of habit, by which this affection may be increased.

Caution, however, should be had not to make use of such violent means as might occasion any considerable alarm ; which in children of an irritable habit, who are the more common subjects of the hiccough, might induce some greater evil than the one intended to be removed. A less known, and pretty certain remedy, is a small quantity of any powerful acid ; lemon juice generally answers very well ; but a tea-spoonful of vinegar seldom or never fails in the accidental hiccough of youth, or of very old people.

STERNUTATIO, OR SNEEZING.

This has likewise been mentioned by some writers as a complaint of young children, for which Rhazes prescribes refrigerants and anodynes ; but it is certainly not a common one, and, indeed, I have never met with it in the form of a disease. Should it so occur, however, some of the antispasmodics, such as musk, castor, or camphor, may probably be exhibited to advantage.

It may be occasioned by looking too long against any strong light, as the fire, and especially the sun, or other very luminous body. It is a well-known symptom of the measles, and of many common colds, but in neither, I believe, requires any particular attention. It is mentioned here, only because I would not pass over a complaint that has at any time been ranked among the disorders of children. But knowing nothing further of it myself, and having no idea of its being a complaint of much consequence in this country, I have not chosen, under such circumstances, to be a mere copyer from others. If violent, however, it may be worthy of further attention ; since, in conjunction with other causes, it may lead to the rupture of some small vessels of the nose : this accident will be noticed in its place.

DENTITION.

The complaints arising during dentition are next to be considered : many of the foregoing, it has been noticed, being

blended with it, the first passages and the nervous system being always more or less affected. The process of dentition is likewise not unfrequently an occasion of many complaints afterwards to be mentioned, such as cough, fever, the rickets, and even pulmonary consumption and marasmus; under which heads, therefore, occasional references will be made to what will be advanced under this.

The time of teething is a most important period of the infant state, and subjects it to manifold complaints and dangers. Some writers, however, and particularly Dr. Cadogan,* and Dr. Armstrong, seem to think otherwise; and that teething is scarcely to be ranked amongst the diseases of infants. They have imagined that children, if otherwise healthy, would cut their teeth with no more danger than adults, who often cut the *dentes sapientiæ*, so called, without any difficulty, and always without hazard; they likewise observe, that many children get their teeth easily. But this argument must suppose the healthiest, and best nurtured children to be, in all respects, in the same circumstances with adults; which is by no means the case; as they are liable to fever, dangerous purgings, and even convulsions, from causes that would in no wise affect the latter; nor can they stand under some of those complaints so long as adults, nor endure the necessary remedies. For the same reason, the measles and small-pox carry off numbers of infants, when attacked by them a little more severely than common, whilst young, and healthy adult subjects, often struggle through the most dangerous and complicated kinds, when properly treated. Not to mention that very few infants who are unhappily affected with lues venerea, recover under any treatment, whilst adults are cured in the most advanced stages of the complaint. I have, therefore, no doubt, that the time of teething ought to be ranked amongst the most hazardous to infants, and that the greatest attention ought to be paid to it; though, it is probable, on the other hand, that Dr. Arbuthnot overrates its fatality, when he says that one child in ten may be supposed to sink under

* See his Essay on Nursing, &c., and Armstrong on the Diseases of Infants.

it; at least, I believe this is not the case where the symptoms are timely attended to.

Though I would, by no means, assert dentition itself to be a disease, yet it induces disease in very many infants of every habit of body, and more especially, however strange it may seem, in the apparently healthy and robust. Indeed weak, and even rickety children commonly cut their teeth easily, though often very late; or if they should be harassed by a purging, and other complaints, they, nevertheless, escape with their lives, while very lusty, strong children are frequently carried off suddenly at this period, unless the teeth happen to find a very easy passage through the gums. The system, during dentition, being disposed to inflammation, such children much oftener fall into 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 a thousand lingering and vexatious complaints, if their viscera are sound. It may, however, be observed, that convulsions more rarely take place where a fever attends.

There are also other circumstances that affect the process of dentition, among which the three noticed by Hippocrates, I believe, are well founded: "That infants cut their teeth more readily in winter than in summer; that such as are rather inclined to be lean, cut them more easily than those that are very fat; and children that are loose in their belly the most safely of all." Rhazes* and Primeros are of a differed opinion in regard to the fittest season; but of the truth of the last of these observations there can be no doubt.

[The rudiments of the teeth are visible in the foetus about the second or third month. As they increase in size they are found to consist of a double membranous sac, from the bottom of which rises a pulp composed of a vascular and nervous substance, and surrounded by a colourless fluid of a mucila-

* Apud Sennert. de Dentit. in Prognost. Sect. v. Sennertus, however, endeavours to reconcile the two opinions, sect. v. of the above work.

ginous consistence. This fluid is gradually absorbed as the pulp enlarges, and ossific matter becomes visible on the summit of the latter about the end of the third month. The ivory portion of the tooth is said to be formed by conversion of the vesicles or cells of the surface of the pulp, into the cells and fibres of the ivory, by the deposition of osseous matter into the former. The enamel commences to be formed subsequent to the ivory from a series of cells produced by the capsule into which the ossific matter is in like manner deposited. The enamel invests the crown of the tooth, getting gradually thinner towards the neck, where it terminates.

The jaw, at first, presents only a channel along its edge; but by the growth of tranverse bony septa, this is divided into cells, and the alveoli are thus formed. The germs of most of the permanent teeth are visible in the fœtus, and are situated behind and below the milk teeth.

At the period of birth the ossification of the teeth is already far advanced, the crowns of the incisors being usually completed, and a considerable part of those of the double teeth formed. The ossification of their roots is a subsequent process, and in proportion as it advances, and as the alveoli become developed, the crowns of the teeth are propelled towards the surface of the gum; and by the gradual absorption of this and of the apex of the enveloping sac, at length make their appearance externally, and are said to have cut the gum. The pressure on the membrane and gums, and the consequent irritation which accompanies this stage of the process, give rise to the painful symptoms of dentition.

The milk or deciduous teeth are twenty in number; they usually appear in pairs, and the incisors of the lower jaw generally precede the corresponding ones of the upper. They commonly succeed each other in the following order: first the middle incisors; next, the lateral incisors; and then the four anterior molares; or sometimes the cuspidati precede the anterior molares, but not often; and lastly the posterior molares; and generally in the following order as to time:

From 6th to 9th month, the four central incisors.

From 8th to 12th month, the four lateral incisors.

From 12th to 16th month, the four anterior molares.

From 16 to 20th month, the four cuspidati.

From 20th to 36th month, the four posterior molares.

Such is the usual process of dentition; but it varies considerably in different individuals, both as to its whole duration and as to the periods and order in which the teeth make their appearance.—H. D.]

Infants are now and then born with some of their teeth cut, mostly the central incisors of the lower jaw, of which Richard III., Louis XIV., and Mirabeau, are notable examples. This premature dentition is neither a proof of protracted pregnancy, nor yet of a strong constitution of the infant, as it has been observed that such children are often unusually small, and frequently die early. These teeth are commonly loose, being only fixed in the gums, and should be immediately extracted, as they will interfere with the act of sucking. We may add that, in some rare instances, the number of teeth of each class varies; thus there may be only three incisors in one jaw, and only three molares in the other.

The above wonted order in cutting the four incisores, appears to be owing to those of the lower jaw being less deep in the alveolar process, as well as thinner and sharper at their points, and therefore likely to force their way before those in the upper jaw; accordingly, at least one of the incisores in the former is usually the first cut. The one opposed thereto in the upper jaw sometimes appearing next, rather than the contiguous one in the lower, seems to be occasioned by the friction of the prominent tooth, against that part of the upper jaw at which its antagonist is to appear. This attrition, repeated every time the jaw closes, derives a greater portion of fluids to that part, increasing its natural action, and thereby forwarding the growth of the tooth; while, by the forcible and frequent pressure of the gums and periosteum against it, as soon as it has made its way through the bone, its eruption is further assisted. If the succession be otherwise, and a second tooth in the lower jaw be cut before one appears in the upper, as, for the reason first given, is more commonly the case, it is not unfrequently before many days; and the two

corresponding teeth, in that case, either follow in two or three weeks, in consequence of attrition, or else do not appear for some months; but whatever the period may be, they generally come forward before any more teeth are cut in the under jaw. It is usually some weeks before the other two front teeth in the upper jaw are cut; and in a week or two afterwards, if there be no constitutional impediment, the corresponding ones in the lower jaw are commonly pushed forward, and for the reasons given for the early appearance of the antagonists to the two first-cut teeth.

In children who are strong and healthy, this process goes on pretty much as above described, and the teeth are cut both easily and soon; but in unhealthy and weakly infants, the process is both slow and uncertain. Accordingly, children sometimes cut their teeth irregularly, or cross, as it is called, both by the teeth appearing first in the upper jaw, and also at a distance, instead of being contiguous to each other: this is 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 frequently making their way in a correspondent manner. To all these general positions there are, however, various exceptions.

Teething is usually preceded and accompanied with various symptoms: the child drivels; the gums swell, spread, and become hot; there is often a circumscribed redness in the cheeks, and eruptions on the skin, especially on the face and scalp; a looseness; gripings; stools green, or pale, or of a leaden-blue colour, sometimes mucous, often thick and pasty; watchings, startings in the sleep, and spasms of particular parts; a diminution, or increased secretion of the urine, sometimes of a milky colour, at others, staining the cloths in patches, as if it deposited a brown powder; a discharge of matter, with a pain in making water, (imitating exactly a virulent gonorrhœa,) which often mitigates the fever: in almost all cases, the child shrieks often, and thrusts its fingers into its mouth. The difficulty in micturition, however, is some-

times very troublesome, and the pain apparently very great, attended with long and vehement shrieks, for some time before the urine has passed.

Demulcent remedies, such as are recommended in the chapter on *Ischuria*, can scarcely be given to infants of only four or five months old in sufficient quantities to be of much service, and are indeed but little required, if the infant be suckled; but if it be nourished by the spoon, they may be made trial of, as they sometimes succeed. Should they fail in any case, recourse must be had to the means prescribed in the chapter on *Dysuria*.

A symptom less common than any of the foregoing, and appearing only in certain habits, is a swelling of the tops of the feet and hands: it is seldom, however, of much importance, and goes away upon the appearance of the teeth. I have never met with it but in infants who cut them painfully; and being seldom accompanied with a purging, probably may in its stead prevent that fever which is otherwise so apt to attend. In some instances, however, this symptom has been accompanied with considerable fever, but in such, children have either been costive or the stools have been fetid and clayey, and the swelling of the extremities very considerable. In such cases, purging with calomel will be proper; and it may sometimes be necessary to give a few drops of tinct. scillæ. Nevertheless, if there be no internal disease, this affection proceeds no further; but whenever it does, it must be treated as the anasarca, which will be noticed in its place. I have likewise, in a few instances, met with a transient palsy of the arms or legs, which in one instance recurred as often as teeth were making their way. The above-mentioned symptoms are often followed by a cough, difficult breathing, fits, fever, scrofula, and marasmus; and sometimes by hydrocephalus. A symptom of less consequence, though alarming to parents, is the tumefying of one or more of the glands of the neck; but this is rarely followed by suppuration—a bread and milk poultice, or an embrocation of volatile liniment, is all that is usually required.

Strong and healthy children cut their teeth earlier than the

weak and tender: I have, indeed, known a weak and rickety child without a tooth at twenty-two months old,* though it lived to grow up; but at the age of five years became scrofulous. The robust, however, are more subject to fever, and for the reasons already assigned. The fact, indeed, is, that the extremes of high health, and of debility, are both dangerous; the one being exposed to acute fever, or convulsions, the other to a slow hectic and marasmus. Therefore, air, exercise, food of easy digestion, in moderate quantities, and taken at regular intervals; an open belly, and every thing that has a tendency to promote good health, and to guard against fever, will greatly contribute to the safety of dentition, and to children passing quickly through this hazardous period.

Difficult teething is to be treated nearly as other acute diseases with local inflammation. If the body be at all bound, some opening medicine should be administered, and it has been observed, that even a considerable degree of looseness is useful. Diluting drinks are likewise very necessary, especially if the child does not suck. If much fever attends, the loss of a little blood will be necessary; though children do not endure bleeding so well as they do other evacuations. If the propriety of bleeding with the lancet be doubted, a leech or two, as Harris advises, may be applied behind the ears, and is generally serviceable. Clysters are also very useful, especially if there be retention of urine, which will likewise call for the use of the warm bath. Gentle diaphoretics are also serviceable, particularly *vinum ipecacuanhæ*, or the liq. *antimon. tartarisat.*, which, besides opening the belly, often operate in this way: a blister should likewise be applied between the shoulders, especially if there be any disposition to fits. And, indeed, if stools do not afford some considerable relief, there should generally be some discharge from the skin; since a purging, and eruptions on the skin, when spontaneous, are the grand means of easy dentition. A little discharge should, therefore, be kept up behind the ears, by rubbing the parts with Spanish flies, applying a thread as before directed, or

* Primeros speaks of the appearance of the teeth being as late as the third, or even fourth year.

putting on a small blister; which may be kept open. A Burgundy-pitch plaster laid on the back will sometimes suffice, which should be renewed every ten or twelve days, till the symptoms disappear, or the teeth come into sight. Even before this period, slight scarifications of the gums are very useful, by taking off the tension; or if the teeth are at all to be felt, lancing them.

I shall close what I have to offer on the general plan of treatment, by observing, that the indications certainly are to assist the eruption of the teeth, and to moderate the inflammatory and other symptoms; which must be treated according to their kind: all parts of the body readily consenting with the gums at the time of teething, but the nerves, the bowels, and lungs, more particularly and importantly than the rest. It has been observed, that a purging is beneficial, and it is, indeed, surprising how considerable a diarrhœa children will stand on this occasion, and how very bad the stools will often be for many weeks together, and a child happily struggle through; though at another time, an equal degree of purging, with such bad stools, and constant fever, would prove infallibly fatal. The diarrhœa is therefore not only to be cautiously treated according to the directions already given under the article of purging, but is generally rather to be encouraged than suppressed. Very pale stools are not uncommon at this time, and are sometimes in vast quantity: I have known an infant have fifty in one night, at least by the account of a careful and discreet nursery-maid; and from the quantity of fæces that I saw the next morning, I had no reason to dispute it.

For the fever of dentition, besides bleeding, the absorbent powders are eminently useful, and are, in various respects, calculated to afford relief. To these, sometimes, a grain or two of Dr. James's powder may be added at bed-time. Nitre is very often useful, joined with the testaceous powders, or the *pulvis è contrayerva comp.* as there may happen to be more or less fever. Sydenham directs the compound spirit of ammonia in a spoonful of water every four hours, for four or five times, and I have thought it very serviceable after proper evacuations. Nor is a drop or two of laudanum to be feared,

if the bowels have been previously opened, the pain be very great, and the breathing not difficult.

A free discharge from the bowels, however, must above all be preserved, when children cut their teeth with fever; and the testaceous powder is therefore not to be administered too frequently. The state of their gums must also be carefully attended to, or their fevers will be mistaken, and attributed to cold, or other causes, when the source of irritation is wholly in the gums.

The lungs are among those parts on which the irritation from teething is apt to fall, and the symptoms, when fixed there, bear an alarming aspect. A precise acquaintance with their true cause is therefore of the greatest importance; and for the want of it, an unsuccessful plan of treatment will be adopted. I speak this from much experience, having known good physicians overlook the true cause of inflammatory symptoms; especially when children are supposed to have cut the usual number of first-teeth.

At this period of the usual first-teething, I have met with the most alarming peripneumonic symptoms; soreness of the chest, cough, and great difficulty of breathing, with loss of appetite, continual fever, and the appearance of general decay. In this state, purging the bowels, and properly lancing the gums of all the expected teeth, has given immediate relief; and by keeping up the purging for three or four days, every threatening symptom has so thoroughly subsided, that in a fortnight's time, a child expected from day to day to die of inflammation, or fall into marasmus, has been restored to its former health and spirits.

A principal indication is to assist the eruption of the teeth. This may be done by cooling, sedative, and demulcent applications made to the gums; by rubbing them with some hard polished body, such as the coral; or by dividing them with the lancet; which last is the only means to be depended upon. Rubbing the gums, however, I apprehend, not only somewhat appeases pain, as adults sometimes experience in the common tooth-ache, but it also forwards the growth of the teeth, by drawing more nourishment to them, as well as as-

sists their eruption, by pressing the gum and periosteum firmly against their points. Suitable applications on this occasion may be, either *mel. com.* or *syr. papaver. albi*: or the honey may be lightly acidulated with *acid vitriolic dilut.* Besides the coral, a crust of bread, or a piece of liquorice-root, or wax-candle, or a ring of Indian rubber, may be often carried to the mouth, and may sometimes be preferable, as they will yield a little to the pressure of the gums.

These means, nevertheless, and especially the coral, have been objected to by some modern refiners; but the objections are certainly groundless, as in giving this direction we are only following nature. For the young of all animals who suck, as soon as the teeth begin to shoot, are always strongly inclined to gnaw such things as afford a little resistance. This may be every day observed in domestic animals; to prevent which in puppies, recourse is had to a ridiculous operation of worming, as it is called, which rendering the mouth sore, may prevent them for a time from gnawing every thing that comes in their way; and if their gums become easy, or teeth are cut the mean while, they have no longer any desire for it, but what arises from the playfulness of youth.

When it is found necessary to lance the gums, (which is at least, a safe operation,) it should always be done effectually, with a proper gum-lancet, so that both the gum, and the strong membrane that covers the teeth, may be sufficiently divided. The lancet should always be carried right down to them, and even drawn across the double teeth by a crucial incision. It is certain that this little operation gives scarcely any pain, and the relief is at the same time so considerable that the child immediately manifests it, by smiling, and by squeezing the jaws and grinding them together forcibly; which proves that the gums are not very sensible.

The most painful part of dentition, and that in which children are most exposed to convulsions, is usually from the teeth cutting through the periosteum. This, I apprehend, in difficult dentition is often not cut through, but is forced up before the teeth, when they are even in sight under the thin gum; hence it is, that cutting through the membrane is so very

often useful, and takes off fever and convulsions, which severe symptoms could not arise merely from teeth piercing the gum, which is not a very sensible part. At other times the pain and fever seem to arise from almost the very first shooting of the teeth within the jaw, and then they will very often not appear for some weeks after the gums have been lanced; and parents are therefore apt to conclude, the lancing has been unnecessary, if not improper. I am, however, convinced, from experience, that this little operation, though not in the general esteem it ought to be, and by the French physicians perfectly dreaded,* is often inexpressibly useful, and appears to have saved many lives, after the most dangerous symptoms had taken place, and every other means of cure had been made use of. The mere bleeding from the gums is capable of affording some relief, as it is frequently found to do in adult persons distressed by the tooth-ache. And I cannot here forbear expressing my surprise at the fears some people entertain of lancing the gums, and their delaying it so long, if not altogether rejecting it, though no evil can possibly arise from the operation. On the other hand its advantages are so great, that whenever convulsions take place about the usual period of dentition, recourse ought to be had to it, though by an examination of the gums there may be no certain evidence of the convulsions being owing to such a cause; the irritation from teething sometimes taking place in the very early stage of the process. At any rate, the operation can do no harm, even at any period; and should the shooting of teeth be only an aggravation to the true cause of the disease, lancing the gums must be attended with advantage. But should teething be the proper and sole cause, it is evident how fruitless any other means of relief must frequently be: for should convulsions, for instance, take place from a thorn run into the finger, or toe, the proper indication of cure by an immediate extraction of the thorn, and the futility of other means, must be equally obvious.

The operation may also be safely repeated, the scars doing

* See Lieutaud.

no kind of harm. This, however contrary to popular prejudice, may be readily proved, not only from the fact of infants cutting their first teeth very easily some weeks after being lanced, but also from the circumstances under which the second teeth are often cut. At this period, children from their more advanced age, and decreased irritability, are less subject to fever, and evidently appear to suffer far less pain, than in the first teething, though the second teeth often have to make their way through much more considerable scars than have been made by a lancet, from the gums having been lanced prematurely. The objection to lancing the gums, from any apprehension arising from the scars, is, therefore, altogether ill-founded; and, indeed, it will be frequently necessary to lance the gums several times, especially on account of the extraordinary difficulty with which some infants cut their double teeth, which are furnished with two or more knobs or points. Purging, fever, and even convulsions, will sometimes arise from only one point of a large tooth offending the periosteum that covers it; and being nearer the surface than the other points, the lancet may sometimes not completely divide the membrane that lies over the rest; and this part not being injured by the tooth, the symptoms subside on having divided that portion of the membrane that was inflamed. But in a little time, another point of the same tooth is found to irritate the periosteum, and calls for the like assistance of the lancet, which again removes all the complaints. This, at least, I have conceived to be the process, when I have found lancing a large tooth immediately remove every terrible symptom, though the fever and other complaints have returned, and the whole of the tooth not appeared till the operation has been three or four times repeated. I have seen the like good effect from it, when children have been cutting a number of teeth in succession, and have bred them all without convulsions, nothing having relieved or prevented these terrible symptoms but lancing the gums, which has removed them every time it has been done, one or more teeth appearing a day or two after each operation.*

* Precisely similar remarks have been made by Mr. Hunter. See his *Practical Treatise on the Diseases of the Teeth*, p. 121.

In such cases it will often be proper to draw the lancet along a great part of one, or even both the jaws, instead of over only one or two teeth, as is commonly done, as well as sometimes to lance the incisores by a crucial incision, as is commonly done for the molares. Some writers, however, and Dr. Millar particularly, have advised not to cut quite down to the teeth, but only to scarify the gums, unless the teeth are very near. He suspects that the instrument often injures them, and produces caries, which he thinks will be communicated to the succeeding set of teeth; but this is a mistaken theory,* owing to inattention to the true state of the teeth, which are perfect bone, and covered with a strong enamel, long before they get through the gums. The manner of the second teething of children likewise forbids such a fear; for though the first set (which are designed by nature to be only of short duration) should actually be injured by the lancet, the succeeding ones are not at all likely to be affected by the carious state of the former. For the first teeth of infants constantly become carious at the roots, and are loosened and expelled by that means when left to nature alone; and though, in many instances, the upper parts of the new teeth are for some time nearly in contact with the carious bottoms of the first set, they never suffer from this circumstance. I have dwelt the longer on this head, because writers are not agreed on this subject, and it is a matter oftentimes of no small importance. I have, however, written from experience; and am perfectly satisfied of the propriety and safety of what I have ventured to recommend.

Children sometimes have ulcerated gums in teething, and more frequently where they have not been lanced; these ulcers are easily cured by keeping the body open, and touching them with astringent applications. As much white vitriol, or roch alum, as will give a moderate roughness to a little honey, is usually sufficient for this purpose. But should this fail in any case, it must be treated as directed under the head of Canker.

* Such instances manifest the great impropriety of establishing practice from theory, instead of deducing theories from facts.

The diet of infants at this period remains to be noticed ; and it should be a pretty general rule during the time of teething to abate a little of the usual quantity of the food, and to increase the quantity of drink, unless the child is very weakly, or every thing is going on perfectly well ; or if the child be at the breast, a similar regard ought to be paid to the diet of the nurse.

[We cannot close this article without again calling attention to the great importance of a spare regimen for children during dentition, as expressed in the foregoing paragraph, and also the keeping of their heads cool. When suffering from disease of the head, chest, or abdomen, extraordinary relief is afforded by freely lancing the gums, and this should be repeated again and again if the symptoms are not ameliorated. The best mode of performing the operation is by placing the child in the nurse's lap, the front of the child's face, and the side of the nurse's face, being turned to a window ; the operator, sitting behind the child, brings its head back into his lap, or places it between his knees ; the child generally cries ; consequently opens its mouth, and he can then with freedom lance any or all the gums he may deem proper. When the child does not open its mouth, compression of the cheeks firmly between the fingers and thumb will usually make it do so.—H. D.]

FEVER.

Having considered the more early disorders of children, and especially such as are sometimes connected with pyrexiaë, it will now be proper to treat more distinctly on the species of fever induced by them, or otherwise incident to childhood. In a view to the latter, however, it may be observed, that though some writers have supposed infants to be as liable to fevers as adults, and from the same causes, I have by no means found it so ; having observed for many years, as well in the hospital as in private practice, that infants do not readily take common fevers, though exposed for a long time to that contagion which

has appeared to affect adults* all around them. Their fevers are also of a short duration if properly treated, unless the few that arise from some more permanent irritating cause.

Young children, however, are disposed to certain febrile complaints, and to some peculiar to themselves, which I shall bestow some pains in specifying, as well as pointing out the treatment most adapted to each.

The more frequent causes of fever are teething, foul bowels, worms, glandular diseases, some eruptive complaints, or exposure to cold.

To begin with the last-mentioned cause, as one often suspected: if the cold be severe, it will be easily distinguishable, as the febrile heat will always be attended with a cough, and hoarseness, and some difficulty of breathing, and often with running at the nose and eyes, which is noticed in no other fever, at its commencement, except it be the measles; which will be attended likewise with violent sneezing, and a peculiar appearance of the eyes, not often met with in a common cold.

The treatment of this fever in children is usually as manifest as its cause. Should the heat be considerable, the cough violent, and the difficulty of breathing very great, a blister† will always be safe and expedient, and may be applied at the pit of the stomach instead of the back: as being both less painful under any motion of the body, and more readily got at

* Every physician attending lying-in hospitals must not only have known many infants suckled, without injury, through the whole stage of bad fevers from which mothers have recovered, but also, in other instances, sucking greedily within an hour or two of their mother's death.¹

† I cannot omit this opportunity of expressing my opinion, that the common practice of applying a blister to the chest, as a *first* remedy, in cases of active inflammation, is very injudicious and detrimental.—S. M.

¹ There seems something so barbarous and inhuman, as well as absurd, in putting a child to its mother's breast within an hour or two of the poor woman's death, that it may be hoped the practice is quite discontinued in every lying-in hospital. Long before the last fatal stage of bad fevers has arrived, every drop of milk must have left the breast; and to put the unfortunate child to *suck greedily* under such circumstances cannot be too much reprobated.—S. M.

to be dressed, or for the application of fresh cloths, where the discharge happens to be considerable. But if the fever and difficulty of breathing should not be very much abated by the blister, children, though within the twelvemonth, will bear, and even be greatly benefited by, the loss of a little blood;* and if not by the lancet, at least by the application of two or three leeches, especially if the head be affected; and I mention this again, because it has been thought so highly improper for infants. But I can venture to say, they will be much less reduced by it than by the continuance of the fever, which the loss of a little blood will, in many cases, shorten by two or three days; it is also sometimes absolutely necessary, as in peripneumonic cases, in which it may even be repeated with safety and advantage.† Indeed, in some instances, the only means of saving an infant's life is taking away at once a sufficient quantity of blood at the commencement of the peripneumonic symptoms. And this becomes the more expedient, from the consideration that not only inflammation, but true tubercles of the lungs are formed at a very early age. Oily medicines, likewise, made into a neat emulsion, are often useful, especially if the child be not suckled; but they should be preceded by an emetic of wine of antimony, as there is usually much phlegm on the chest, children never coughing it up. In many cases it is also necessary to repeat the emetic as often as the phlegm in the throat is collected in such a quantity as seems to impede respiration. But if the cough be dry or convulsive, Bates's *spirit sal ammoniaci succinat.* may be safely and usefully administered, if there be not much fever. The body at the same time should be kept perfectly open, and this purpose is usually well answered by smaller doses of wine of antimony, or of Dr. James's powder; but if they should fail

* Rhazes permitted cupping after three or four months; Avicenna, at a year old. Some allowed of bleeding in the feet or legs, though not in the upper parts: but this useful operation is now justly unconfined, and extended, occasionally, to every period of life.

[See a note upon this subject, pages 124, 125, 126.—M. H.]

† Multa in præcipi periculo rectè fiunt, aliàs omittenda.—*Celsus, lib. iii. cap. 18, p. 150.*

to procure stools, as they sometimes will, where there is much fever they rather do harm than good, unless a little manna or rhubarb be joined with them. Should the head be much affected, the feet should be put into warm water, or a mustard foot-bath, or sinapisms, should be applied to the soles of the feet, and in more aggravated cases, blisters to the inside of the calves of the legs. If the fever be accompanied with much cough, and attended with difficulty of breathing, which comes on by fits, both may be greatly relieved by the compound spirit of vitriolic ether, given three or four times a day.

Though the severer treatment above mentioned is indispensable when the cough, difficulty of breathing, and degree of fever are considerable, it is proper here to remark, that I have known children of two or three years old seized with a sudden difficulty of breathing, in coughs arising from common colds, where the fever has not been proportionate to the other symptoms. In such cases the difficulty of breathing may arise from bile on the stomach; and it may therefore be prudent, previously to bleeding and a blister, to give a small dose of James's powder, which will pretty certainly act as a vomit, if our suspicion has been just, and will remove that threatening symptom very soon.

It is scarcely necessary to remind the reader, that preparations of antimony are very powerful medicines, and not to be prescribed indiscriminately, as they sometimes are, by those who are in no wise competent judges, and against which practitioners will do well in offering a caution in the nursery. But where such medicines are found to agree, and keep the belly open, children frequently stand in need of no other; though where the fever has been very considerable, I have given nitre with advantage to infants of only a few months old. In the little fevers arising from taking cold, to which some children are very liable, I often join it with Dr. James's powder, and a few grains of the compound powder of contrayerva, lowered with testacea, which I find to be a medicine exceedingly useful when given in time.

If the fever be not owing to taking cold, to worms, teething, or some eruptive complaint, it will generally be found to arise

from some foulness in the first passages; in which case opening the belly, and afterwards giving an emetic, and the testaceous powder, usually remove it. On this account, great attention ought to be paid to the state of the bowels, and not only in regard to the number of stools, but their kind. This should be a maxim with all those who have the superintendence of children, especially infants, under whatever complaint they may labour; as a principal indication must be taken from the state of their bowels. In the present instance, if a laxative and emetic have not removed the fever, opening medicines must be continued a while longer, especially castor-oil; but if the stools are very fetid, the *pulvis è scammonio cum calomel.*, or small doses of calomel alone, are the fittest purge. I have known not only convulsions, dilated pupils, and drowsiness, but also paralytic affections, attended with great pain and continual fever, induced merely by a foul state of the bowels; where, after the complaint had been unsuccessfully treated as a fever of another kind, all the symptoms have been removed at once by an active purge. At other times, infants of only three or four months old will often have very considerable fever and fits, with so costive a state of the bowels, as to require strong purgative medicines to be repeated for several successive days, with clysters and the warm bath, before the obstruction can be removed, or the fever will at all abate; and I doubt not it may be matter of surprise to those who may not frequently have met with such cases, to find how great a quantity of purging medicines have been taken by a tender infant before one proper stool can be procured,* and how certainly a relapse will take place, if the opening plan be not persevered in, in the manner recommended. In less urgent cases, and especially in very young subjects, much gentler means will usually succeed; and after the belly has been once or more well opened, many common fevers will nearly subside; after which it will frequently be proper to return to the testaceous powders, in one form or other. These will compose an admirable medicine for very young children, as well under slight fevers, as for almost all their complaints not attended

* See page 162.

with costiveness. This the judicious Harris was so sensible of, that he thinks them alone sufficient to effect almost every thing during the *infant* state, and has done unspeakable service by abolishing that indiscriminate recourse to cordial, and other heating and rough medicines, such as mercury, *aurum fulminans*, *theriaca*, &c., together with various anile and superstitious remedies, which the ancient writers frequently recommended on occasions peculiarly improper; and though absorbents will not do every thing he has imagined, yet are there very few medicines of such general use. But should the fever withstand these common remedies, or be found to increase, it will be necessary to give some of those before recommended; or, what is often very useful, little draughts of *succus limon.* and *carb. potassæ*, in which the latter is left a little predominant; or a few drops of the *spirit. ammoniæ comp.* four or five times a day, as recommended for the fever of dentition.

In many fevers of infants, where the cause has not been so obvious as it commonly is, I have experienced very good effects from persevering in the use of small doses of the *vinum antimonii*, given in a saline draught; this medicine sometimes acting as an emetic or purge, and at others as a stimulant and diaphoretic, possesses peculiar advantages.

There is a fever to which children, long after the time of teething, are liable, that is of no marked type; which, though it turns out to be owing to foulness of the *primæ viæ*, arises more from the acrid secretions from the liver, or other glands, than from a collection of *fæces*, or a costive habit; and is more remarkable for the great pain in the bowels than for any other symptom.

It commences like other fevers in children, and is of uncertain duration. The pulse is oftentimes exceedingly quick; the breathing bad; the tongue dry and brown, with a cough more or less violent throughout the complaint. On this account, it is in the beginning often suspected to be owing to taking cold; but the cause, I believe, is always in the first passages.

Though procuring stools freely for several days is found to abate the fever, yet the child is at no time entirely free from it, though it frequently remits; which may assist us to distinguish this fever from others.

The stools, which at first are very fetid, in a little time become very numerous, mixed with a great quantity of slimy matter, and are attended, or followed, by very great pain. This has sometimes discouraged practitioners from further purging; but where no other source of fever is discovered, and cooling and antimonial medicines are found to afford no essential relief, the exhibition of repeated purges has proved the surest remedy. To this end, two or three grains of calomel taken every night, and *infus. sennæ* the next morning, has seemed to have the best effect in the earliest stage of the disorder; but after the severe pain and slimy stools have taken place, castor-oil may be substituted, and given only every second or third day; composing the bowels, and taking off the spasmodic pains, by repeated doses of laudanum, on the intermediate days, and especially on the nights after the operation of purgatives. This plan should be continued until the fever entirely subsides, (which will sometimes run out to two or even three weeks,) and the appetite for food returns. Previously to which, some light bitter, given in a saline draught, or *lac amygd.* or *pulv. è tragacanth. comp.* in the intervals of purging, will tend to comfort the bowels, and hasten the natural inclination for food, from which there is often a long aversion.

There is a fever which may be just hinted at in this place, which will be more particularly noticed in the chapter on hydrocephalus, for which also repeated purging is the remedy. The symptoms strongly resemble those of water in the head, but the stools are of a very uncommon appearance, resembling meconium; and are not evacuated by common purges, but are brought away in great quantities, and for a considerable time, by calomel; the fever and stupor abating in proportion as this kind of stool is brought away.

I have sometimes met with a fever, more remarkable for its

being attended with inflamed and sometimes painful tumours, than for any other symptom peculiar to it. These are seated chiefly on the legs, and particularly along the spine of the tibiæ; and rise in a day or two to the size of a nutmeg. They are marked with all the appearance of abscesses, feeling as if they contained matter; and, on this account, they put on a formidable aspect to such as may not often have seen the disease; but, what is remarkable, they never, I believe, come to suppuration, unless irritated by the clothes or other means, but disappear again in a few days, though the fever sometimes continues. The like appearances have been met with in adults, especially females, though perhaps more commonly in children from three to ten years of age; but are not peculiar to scrofulous habits, though the tumours have very much of a scrofulous appearance and feel. As far as my experience has gone, (for I believe it is not a very common complaint,) they are conjoined more frequently with that fever which attends a foul state of the bowels, than with any other; which therefore requires repeated purging, especially with calomel; and on this account the *pulvis è scammon. cum calomel.* becomes a convenient preparation. Saline draughts, with the *sp. ætheris sulphurici comp.* may be given on the intermediate days, and in the end the bark is commonly useful.

These appearances have sometimes been preceded by scarlet spots, or patches, resembling the petechiæ observed in malignant fevers, as was noticed under the article of rashes.

On the decline of some fevers, especially those arising from foul bowels, it is not uncommon to see an eruption on the skin, resembling that called the red-gum, in the mouth; and sometimes even the thrush will make its appearance, though the infant may have had that complaint before; which are marks of the great disturbance the first passages have suffered, and of the consent they have with the skin: the former is a favourable indication, but the observation is far from holding good in regard to the thrush.

At the decline also of certain anomalous fevers, that have lasted ten or twelve days, (and sometimes after the *febris scarlatina*,) great pain of the neck has taken place, attended

with a little tumour of the part, and great rigidity of the muscles, drawing the head forcibly to one side. A general debility and want of appetite has continued, though the bark has been administered, and seemed no wise to disagree. In this state, fomentations and poultices applied to the neck, together with some volatile embrocation, has soon removed the contraction and pain; after which children have recovered, as on a sudden, their appetite and spirits. During very cold weather, however, I have known a slighter degree of pain and stiffness of the neck, with a little fever, return a week or two afterwards; possibly from taking cold, and, as I have thought, from improper food. The antimonial powder, with saline draughts, and a repetition of the topical applications have in such cases had an immediate good effect.

Fevers in children of three or four years old, particularly in certain seasons, are found tedious of cure by any of the above means, and, like those of adults, require the bark, (especially under the recurrence of the thrush,) which should be administered in a light decoction, three or four times a day, in such doses as the symptoms may require.

REMITTENT FEVER.

Notwithstanding what has been observed respecting the remittent fever, as described by Drs. Armstrong and Butter, there is certainly a fever of that type that deserves a cursory consideration in respect to a peculiar symptom, which, I believe, always attends it; though the fever itself certainly arises merely from an affection of the *primæ viæ*.

Indeed, it is well known to practitioners much conversant with the disorders of children, that various febrile affections, differing in degree, and the time of their continuance, originate from the state of their first passages; but as the treatment is similar in them all, varying chiefly in regard to the strength, or other circumstance, of the purging medicines exhibited, it would be equally unnecessary and perplexing to multiply names, where no essential distinction subsists.

The present chapter therefore is added only to denote a

fever of this kind, which constantly remits and increases again, sometimes for three or four weeks, or sometimes much longer, and is attended with the remarkable symptom of picking at various parts of the body until they are made to bleed, and even become sore, particularly the fingers, the nose, lips, or the tongue. But this fever being equally remarkable for being always, I believe, void of danger, it is necessary only to remark, that it seldom attacks children under four years of age, nor upwards of ten; and that, although it has been distinguished into the acute, slow, and low infantile remittent, it requires much less variety of treatment than such distinctions seem to import. The proper, and always successful plan, being confined to the repeated exhibition of some gentle purgative medicine, or light cordials, when accompanied with much languor, as is not unfrequently the case.

The *Infantile Fever*, the *Infantile Remittent*, the *Bilious Remittent of Infants*, or as it is sometimes, but improperly, called, the *Worm Fever*, generally arises from indigestion, occasioned by food of an improper quality, or too abundant in quantity. It is very frequently produced in children during the holidays from school, by various kinds of pastry in which they are then indulged, with perhaps a glass of wine or punch, or a drop of brandy or other spirit. It is a disease so far from being "void of danger," that it frequently excites the greatest apprehensions, and sometimes it proves fatal, or lays the foundation for other disorders, that are ultimately to terminate fatally. This complaint is apt to creep on very slowly and insidiously; the child is generally in a drooping state, some time before its illness calls for very decided attention. Not uncommonly, slight relief is obtained by the occasional purgatives, which are sometimes given, but they are seldom continued with sufficient perseverance to effect a cure. At length the loss of appetite, the fever, the thirst, the restlessness, the starting in the sleep, the pallid countenance, and the tumid belly of the child, attract more direct attention; medical aid is sought for, and the physician finds his patient with a dry hot skin; generally drowsy and unwilling to exert himself; his tongue coated entirely over with a firm white fur; his

nose pinched in, a bluish tinge about his mouth and eyes; pulse quick, and the belly tumid, hard, and irregular in shape and feel.

In the treatment of this complaint, it is of great importance to keep up a regular, daily, but not profuse purgation, by the use of calomel, jalap, scammony, rhubarb, sulphate of potass, senna, and castor oil, varied or combined according to circumstances;—calomel, or some other mercurial preparation, being one of the indispensable articles. Some practitioners seem to rely upon purgatives alone: but the saline mixture, nitre, and antimonials, assist so much in abating the disease, that they ought not to be omitted: and in cases of great irritability, small doses of the milder narcotics are to be employed; nor ought the advantages to be overlooked, which may be gained by pediluvia, fomentations to the abdomen, and ablutions with tepid water. As the disease advances, bitters, ammonia, bark, the mineral acids, &c. may be required.

It is seldom necessary to take away blood, when this disease pursues its regular and simple course; but it sometimes becomes complicated with affections of the head and chest, which may make both blood-letting and blisters essential remedies.

This disease, and the three fevers next in order enumerated, seem to be so nearly allied, that they may be considered as one and the same complaint, at different periods, and under somewhat different modifications. The remittent is the more simple form of fever, originating in a deranged state of the stomach and bowels. The Typhus, or low fever, next mentioned, is a more aggravated form of the Remittent, with increased debility. The Mesenteric Fever is the same complaint, with so much further derangement, as for the mesenteric glands to be enlarged, obstructed, and diseased: and the Marasmus is the most aggravated form of all, much less likely to be cured; but out of which, under very careful and unremitting attention, continued for many months, some infants have happily escaped.—S. M.

TYPHUS, OR LOW FEVER.

A fever of much importance, however, is mentioned by Dr. Hamilton, and is a true low fever, or Typhus. It is very accurately described by him, and particularly as commencing generally rather with marks of languor and fatigue, than with any distinct rigour. The stomach is frequently sick, and pain in the head soon succeeds, with great thirst and restlessness. On the second day there is an evident remission, which is at the first very regular, and continues, though in a less degree, till the termination of the fever, which will run on for three weeks, and sometimes five; and yet, as far as my experience has gone, the little patient recovers, if duly supported; and, I think, I once saved the life of a child of seven years old, by sitting at the bed-side, with my hand on the pulse, and as often as that sunk, (as it often did so much as not even to be felt,) supplying the child with burnt brandy and other cordials; though at times it was doubted whether it was able to swallow. The attempts were at such times, of course, made with great caution, by administering only a tea-spoonful at a time, which was sometimes retained awhile in the mouth, and at others swallowed with avidity; the pulse always rising in consequence.

It will be obvious, that if we be called in pretty early in the disease, a powerful emetic should be administered, and perhaps ipecacuanha is one of the most certain, and best; and some purgative medicine administered soon afterwards. If the pain be extreme, the body and head should be washed with cold vinegar and water; while diluting sub-acid liquors should be taken freely, as long as the thirst is intense; and whenever an evident remission takes place, recourse should be had to cordials, and sometimes the bark. On the other hand, if the pain in the head should increase, or the nose be disposed to bleed, the early application of leeches is indicated, previous to the recourse to cordials, or application of external cold. The bowels should, in every case, be kept open, and when the stools are green, or very fetid, active purges should be admi-

nistered: the air of the apartment should be cool, and a window frequently be opened in that, or an adjoining room, according to the season of the year, and other circumstances. When the vital powers sensibly fail, besides the free exhibition of cordials, blisters or sinapisms should be applied to the feet, and be left on long enough to act as rubefacients; and be repeated again as the degree of debility may require.

[From much experience (formerly) in Typhus Fever, in most of its complications, and in various climates, and more recently a tolerably extensive practice in the diseases of children, we cannot charge our memory with ever having met with a genuine cure of typhus in a child before the tenth year of age. We have deemed it advisable to let the title remain, considering it, with Dr. Merriman, as one of the grades of the Infantile Remittent Fever.

The infantile remittent fever is of such frequent occurrence in children, so varied in its mode of attack, and so apt, if neglected, to merge into a protracted and fatal form of disease, that a brief recapitulation of its symptoms and general mode of treatment will not be inadmissible. In one class of cases the child, from being apparently well during the day, will awake in the night, frightened, with a very hot skin, flushed face, vivid and bright eye, and an accelerated pulse, varying from 120 to 160 beats in a minute. There is great restlessness, and occasionally delirium, and in younger children convulsions sometimes occur.

In a second class, the disease commences gradually; the child loses its appetite and becomes pale, thin, and feeble; is hot and feverish at one part of the day, drowsy and feverish at another; sometimes cool and playful, yet never free from febrile symptoms; at night it starts in its sleep and grinds its teeth.

In a third class the child slides imperceptibly into remittent fever, during the progress of any disorder, particularly of any of the exanthemata. This obviously arises from the proneness of the intestinal mucous membrane to take on morbid action under these circumstances; and which is not unfrequently promoted by the abuse of purgatives in the treatment

of children's diseases. The more delicate a child is, and particularly if it be of a strumous diathesis, the more likely is this occurrence to take place, and then there will be a proportionate increase in the danger of the disease when established.

In any of these forms of attack the fever will at length continue some hours, after which the child becomes sleepy and is not easily roused; in some cases not heeding anything, appearing as if both deaf and dumb; hence the disease has been called the fever attended with dumbness. You sometimes cannot get the child to utter a word, or take any notice whatever; it will remain in this state three or four hours. At other times in the interval of the fever it will lie moaning, or constantly rolling from one side of the bed to the other, in a most distressingly restless state, drawing up its legs towards the abdomen as if in pain: the febrile paroxysm at length returns; there are usually two exacerbations in the twenty-four hours; the evening or night exacerbations are now and then accompanied by delirium; throughout the disease the child has an irresistible disposition to pick; the pains it takes in picking is amazing; it picks a bit of skin off, holds it up between its thumb and finger, looks at it, and then picks again—picking is an invariable symptom of the infantile remittent fever. The bowels are either very much constipated, or small quantities of frothy liquid stools, in appearance anything but natural, are occasionally discharged; the function of digestion ceases; the evacuations are most intolerably offensive; the secretion of bile is suspended, as is evident from the stools being earthy or clay coloured; the urine is mostly high or orange coloured; the tongue is furred and the pulse rapid; the fever varies somewhat in its character on different days, and is frequently accompanied by many other minor or occasional symptoms; the duration of the disease varies from three to six, eight, or twelve weeks.

Prognosis.—If timely attended to, infantile remittent fever is rarely fatal, notwithstanding its tedious course, and the alarming and anomalous symptoms which occasionally arise during its progress. If neglected the patient will be destroyed by irritation or inflammation of the mucous membrane of the

bowels; or the case may terminate in fatal marasmus, or in enlargement of the mesenteric glands, or in scrofulous affection and in rickets producing deformity.

The cause consists in derangement of the alimentary canal, produced by food inappropriate either in quality or quantity, bad air, want of cleanliness, and deficient or thin clothing, in connexion with debility and morbid irritability of the whole frame.

Treatment.—The indications are, first to remove the vitiated contents of the bowels, secondly to restore the healthy state of the secretions, thirdly to allay the irritation of the system, or in other words to restore the impaired organic nervous power. To fulfil these intentions (and we will presume the child to be between four and five years of age) give a brisk purgative of ij. iij. or iv. grains of *hydrarg. chloridum* in combination with twice as much *pulv. scammoniae comp.*, or *pulvis jalapæ comp.*, or what is preferable, give the *hydrarg. chloridum* with an equal quantity of *creta pp.* or *pulvis tragacanthæ comp.*, followed by either of the above powders, or from ℥ss. to ℥j. of the compound senna mixture, repeated so as to procure six or more evacuations from the bowels: the operation may, if necessary, be assisted by an enema. Should there be much gastric irritation or tenderness on pressure of the epigastrium, a couple or three leeches will be beneficially applied to the pit of the stomach. These should be succeeded by alterative doses of mercury, as gr. i. of the *hydrargyri chloridum* every four hours, in combination with chalk or *pulvis tragacanthæ, comp.* Should this appear to run off too quickly by the bowels, or cause griping, the *hydrarg. cum cretâ* in doses of gr. ij. will be preferable.

With either of these may be given some saline or mucilaginous mixture, and if there be much restlessness, the *ext. conii*, or *tinct. hyoscyami*, in the largest doses, proportioned to the age of the child, will be advantageously added, as—

℞ —Liquoris Ammoniae acetatis ℥ss., Vin. Antimonii potass tartratis ℥ss., Tinct Hyoscyami ℥xx., Syrupi ℥ij., Aq. Cinnam. ℥vi., Aq. destillatæ ad. ℥ij. Ft. mist. cujus capiat sextam partem quarta quâque horâ.

A purgative should be given every second day—such purgative should be preferred as will act efficiently on the bowels with least distress to the patient, as we feel assured that inordinate purging is extremely prejudicial. For this purpose either the *pulv. scammonii comp.*, or *pulv. jalapæ comp.*, or *pulv. rhæi cum potassæ sulphate*, or *ol ricini*, or *pulv. extr. aloes aquosi* may be chosen. When the motions become green and flaky in appearance, the mercury should be given at longer intervals or only at night. During the febrile exacerbation the face, neck, and hands may be sponged with cold water, and it will tend very much to tranquillize the child if the feet and legs are immersed every night for ten minutes in a warm foot-bath. When the feet are cold, some flour of mustard should be added to the water, and it will be better if the patient lie in bed with the legs hanging over the side, or be kept in the nurse's lap. The pain of the abdomen will be relieved by some stimulating embrocation, as—

R.—Liniment. saponis, Liniment. camphoræ comp. ā ʒvj., tinct. opii ʒss. ℥. Ft. embrocatio.

In the progress of the disease, after the bowels are well cleansed and there is no fear of congestion of the brain, if the child be restless at night, and roll its head from side to side, one grain of the *pulv. ipecacuanhæ comp.* may be given at night, which, after a night or two, may be increased to gr. iss. or gr. ii. Throughout the disease the child should be kept perfectly quiet; abstinence from all solid food should be most strictly observed—the nourishment should consist of barley-water, toast and water (in which gum arabic may be dissolved), tea, rennet whey, and latterly, when the frequent exhibition of the mercury is omitted, orange juice and water. Two or three varieties of drink should be allowed on the same day. There is no disease where greater firmness is required on the part of the parent or attendants relative to the administration of food than in this, for the smallest error in diet during the treatment may cause a relapse.

By a perseverance in the above mode of treatment, as the stools improve in appearance, and diminish in foetor, and the morbid symptoms disappear, the food may be gradually im-

proved, and half a rusk may be given twice a day, or biscuit, or dry bread, or toast, not to be soaked or sopped. The mastication of these articles induces a secretion of saliva, and insures their better digestion. Chicken broth or beef tea may be added in moderate quantities, or asses' milk, one, two, or three gills daily. These may be preceded by bread with gravy, and farinaceous puddings, gradually increasing the quantities; and as recovery proceeds, a little wine may be allowed. The exhibition of some tonics will be useful; at first any of the light bitter infusions, and subsequently preparations of iron, should be given, and at the same time* a gr. of *hydrarg. chloridum*, or gr. ij. of *hydrarg. c. cretâ*, with gr. ii. *pulv. rhæi*, and gr. ss. *pulv. ipecac.* every night, or as occasion may require. Particular attention should be paid to the bowels throughout, and change of air and regular exercise will tend much to the re-establishment of health. Now and then, where ptyalism is produced in consequence of the exhibition of mercury, or where extreme debility prevails, the carbonate of ammonia and hyoscyamus will be useful, as gr. i. of the former, and from ñii. to v. minims of the tincture of the latter, every three, four, or six hours. Purgatives should be avoided, as they are apt in these cases to produce sudden and dangerous sinking of the vital powers; but enemata should be employed, if necessary, to keep the bowels regular.—H. D.]

MESENTERIC FEVER.

Another cause of fever is obstruction of the glands, especially the mesenteric, and this is often the forerunner of the true hectic fever, or fatal marasmus. It, indeed, frequently arises from scrofula, which then discovers itself by other marks, and will require its peculiar treatment. But there is an early stage of glandular obstruction in the mesentery, and of the fever here alluded to, that is often falsely attributed to worms; but will not yield to mere purgative medicines, as that disorder usually does. It attacks children from the age of three or four years, the fever remitting, and sometimes intermitting, irregularly; is attended with loss of appetite, swelled belly, and pain in the

* See Tonics, p. 151.

bowels; the latter sometimes taking place more or less every day, or generally becoming more violent if the child be a day or two free from it.

After opening the bowels, half a grain or a grain of calomel may be given with advantage, two or three times a week, and on the intermediate days small doses of the *natron ppt.*, either alone, or converted entirely or partially into a citrate by the juice of lemons. If the belly be very costive, as it often is, an infusion of *spong. ust.* and senna is more effectual than any thing, and is an excellent remedy for many little fevers, in older children, when the primæ viæ are particularly concerned. When the glandular fever, just now mentioned, has abated, some light bitter, as of chamomile flowers, is useful to brace the stomach and bowels; and to prevent a relapse, it will often be found necessary to administer some chalybeate, of which the *tinctura ferri ammoniatis* is one of the fittest for children; if it should offend the stomach, a few drops of the tincture of cardamoms, or other stomachic, should be joined with it.

But as the mesenteric fever, from its great fatality and frequency, has lately very much engaged the attention of writers, it may be proper to consider it a little more distinctly in some of its principal stages; in each of which its nature and treatment sometimes materially differ. For before the mesenteric glands become much enlarged, or the fever continual; whilst the appetite continues, and the first digestion is but little impaired, and no purging has taken place, the opening mixture of sponge and senna, with a few doses of calomel, and afterwards bitters and chalybeates, are the only remedies very likely to be called for, and almost always succeed, if duly persevered in. In this state the disorder may still be considered as in its first stage, and of which an unusual costiveness, the hardness and recurring pains in the belly, and a remitting fever, are the principal symptoms. The limits of this work, however, will not allow of a particular detail of the many others that attend this fever through its various stages; and it is presumed they are so well known, as to render it unnecessary; but in general it may be said, that 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, are amongst the more constant symptoms, attending at one period or other of the disease.

This being a glandular complaint, not only are the glands of the mesentery affected, but I have found those of other parts, and especially of the lungs, in a very morbid state, before any of those symptoms of inflammation have been noticed, which are constantly met with, in similar cases, in older subjects. In examining the viscera of more than one infant of only a few months old I have found tubercles, and even purulent matter in the lungs, which have not been preceded by any symptoms of such mischief, and even where there has been no cough nor difficulty of breathing, until a few days before death, and then only so slight as to be scarcely noticed. In one instance I found, in some part of the lungs, tubercles as large as nutmegs, and in others, clusters of smaller ones, (and particularly about the superior and back part of the mediastinum), some of which were hard, and others full of matter. Such appearances seem, therefore, to be common in all glandular diseases, to rickets, and similar disorders arising from cachochymy. Glisson has remarked, that he seldom examined the bodies of infants, dying of rickets, without meeting with such appearances in the lungs.

This fever will sometimes take place in infants at the breast, and children are liable to it till they become eight or ten years old, (and in scrofulous habits much longer) it being often a consequence of the protraction of almost any of the preceding complaints, especially those of the first passages and dentition, as well as of the measles, and a few others; of which that from teething will be separately considered. Among the poor, it is too frequently owing to a coarse and unwholesome diet, and the want of proper exercise and rubbing; indigestion, and a consequent vitiated chyle, with infarction, or obstructions in some of the internal glands, or lymphatics, being among the principal remote causes of the disease.

As prophylactics, therefore, good air, exercise, gentle frictions, an easy dress, frequent washings of the body of young

children with soap and warm water, the cold bath in older children, and especially a light and nutritious diet, with such mild aromatics as may assist digestion, (before the commencement of fever) are some of the principal and most efficacious means. In regard to friction, it may be remarked, that it is as proper a means of cure as a prophylactic, and should be regularly had recourse to, at least night and morning. But when this disease is completely formed, it calls for the most powerful remedies, and such as have happily succeeded in several instances, wherein formerly little hope had been entertained.

As I have passed over many less important symptoms, occurring in the different stages of this long disease, especially such as arise from some peculiarity of habit, I shall, for the like reason, confine these observations to the more general plan of treatment, without particularly noticing a variety of occasional remedies, which such symptoms may at different periods require.

In a general way, the principal indications are to remove the obstructions in the lymphatic system, and effect a resolution of the indurated glands of the mesentery; to carry off this viscid matter; and lastly, to strengthen the system, and establish a good digestion, as well by means of proper diet as by medicine. To accomplish these intentions, attenuants and deobstruents, purges, emetics, and tonics, must be had recourse to, in an obvious order.

Amongst the first, and as general deobstruents, are mercurial and antimonial remedies; neutral salts, soap, steel, and the cicuta; to which, with propriety, I think, may be added electricity.

In regard to the efficacy of mercury and steel in this disease, a vast crowd of testimonies appears among writers* in almost every part of Europe; and a very rational idea has been suggested on this head by Mr. Royer, that of administering mercury clyster-wise; inasmuch as the resolution of local and partial obstructions does not so much require an

* White, Hartmann, Worhoff, Theden, Burchard, Baumè, Baumes, Roseen, Fouquet, &c.

exertion of the collected force of the system, as deriving all the influence of proper remedies to the seat of the disease: an idea of late years pretty generally received, and, in some instances, successfully adapted to the cure of scrofula, as well as other chronical disorders.

Calomel is, perhaps, one of the fittest remedies of this class, and when administered by the mouth, may be combined with, or followed by, some purgative medicine, and given for several weeks, till there shall be some favourable change in the feel and size of the belly; though it will, indeed, be sometimes proper both to exhibit this powerful deobstruent in large doses, and to continue it for a much longer time, and afterwards in very small doses, which I frequently direct in the following form:

R.—*Calomelan*: gr. 1.

Sachari albi ʒi. *Caute misceantur et divid. in chartulas duodecim, è quibus sumat unam manè, meridiè, et horà somni, quotidie.*

The lightest preparations of steel are usually preferable, such as its tinctures, or the salt, or merely some chalybeate water, which will act both as aperitives and tonics. Amongst antimonials, the kermes mineral is found by experience to be more generally useful than any other preparation.

The evacuants proper in this disease are emetics and purges, to which may be added diaphoretics. The two former are more essentially necessary, but must be adapted, and carefully dosed, agreeably to the state of the bowels of the patient. As a purge, rhubarb and tartarised kali are generally the safest and most effectual, and may be persevered in for the greatest length of time; or the composition which, in regard to many cases, has been deservedly extolled by Sir William Fordyce, rhubarb and polychrest salt; which, whenever mercury may not be preferred, should be exhibited daily for several weeks, and will sometimes restore the patient without recourse to any other means, when the disorder is not of long standing, being at once both a purge and an efficacious deobstruent. The following is the formula published by Sir William Fordyce in his *Treatise on Fevers*, 1773. R. Sal. polychrest ʒss. pulv.

rad. rhab. gr. iij. iv. v. vi. vel vii. M. pro unâ dosi omni mane sumend. per 14 dies, vel donec cesserit febris hectica aut tumor abdominis.

Calomel, or hydrarg. c. cretâ, or pil. hydrarg. may with great propriety be added to the above composition, if the physician think such an addition advisable. The good effects of rhubarb and potassæ sulphas, with or without a small quantity of calomel, or other preparation of mercury, and generally, perhaps, with the addition of a little spice, or half a drop of essential oil of anise, or carraway, or mint, are, in many cases of tumid abdomen, extremely great, if persevered in daily for three or four weeks. The dose should be managed so as not to produce profuse purging, but one or two copious stools every day.—S. M.

As a diaphoretic, sarsaparilla, or a more compound decoction of the woods, may be taken together with any of the above-mentioned remedies.

The last means recommended are tonics, which can very rarely be dispensed with; since, although the obstructions should actually be removed, the emaciated state to which the patient is generally reduced peculiarly calls for bracing remedies, especially with a view of strengthening the stomach and alimentary canal, and promoting a good digestion; the only means of obtaining a bland and nutritious chyle, by which the body may be preserved in good health. To this end, the bark, steel, the cold bath, (which, however, and especially the latter, should not be ventured upon till the obstructions are removed) light bitters, and aromatics, are the principal remedies; to one or more of which recourse may be had, as the degree of remaining fever, and the state of the bowels, or the debility of the patient, may point out. To these may be joined daily frictions, especially of the belly, limbs, and spine; or the common soap plaster, or one composed of ointment of marsh-mallows, gum ammoniac, and oil of camomile, may be applied over the whole belly; or the body be covered all over with sea-salt, reduced to a very fine powder.

It has been already hinted, that the diet ought to be of the lightest and most nutritious kind, and carefully adapted to

the age and other circumstances of the child, who, if at a due age, ought in many instances to partake of light white meats, as well as vegetables and plain jellies, but always avoiding fat and greasy aliments, pastry, and whatever may not be duly, as well as quickly digested, or will not form a bland and nutritious chyle, however readily they may get out of the stomach.

Though it has been said, that merely purging with calomel or rhubarb for a length of time will in some instances succeed, and in others, some of the above remedies may be more adapted to the patient than the rest, yet more commonly, as before noticed, each of them will be useful at one period or other of the complaint, and sometimes the union of several; but above all, purging is always the most essential to the cure of this dangerous disease. And though it is oftentimes attended with costiveness, and a voracious appetite, it is, at others, accompanied with a loathing of all food, and frequent stools, which do not reduce the belly, but too often deter practitioners from the use of active, or repeated purges; without which, however, experience proves there can be no prospect of success, after the belly has once become enlarged. And I wish here to add, as the result of experience, that I have been equally surprised at the great quantity of purgative medicines, especially calomel, and at the success attending the protracted use of them, in cases wherein I had myself at first despaired of being of any use. I shall close these observations with offering the following form, which, in a general way, I have found very suitable. It should be continued for a length of time, taking care that the bowels be kept properly open.

R.—Calomelan. gr. j. ad ij., Pulv. Ipecac. gr. ss. ad gr. j., Zingiber. gr. vj., Misce, ft. pilulæ iv. cum quantitat. sufficient., vel Conf. aromaticæ, vel Conf. opiatæ, ut alvi status postulet. E quibus sumatur j. singulis aut alternis noctibus, vel omni nocte manèque. Post aliquod tempus addentur pulv. rad columbæ grana octo vel decem.—Together with this pill, the cicuta will sometimes be very serviceable.

Since I quitted general practice in London, the *solutio arsenicalis* has been used with considerable success in this disease;

but, certainly, to children, should be administered only in the smallest doses.

This disease has been spoken of also under the denomination of *abdomen tumidum*. The preparations of iodine, in combination with some light tonic, or sarsaparilla, are eminently useful in its treatment, as is also the *ferri iodidum*. Immersion in a tepid salt water bath once a day, with active friction to the surface generally, will be found a valuable auxiliary, and the abdomen should be well rubbed twice a day with a warm stimulating embrocation. A belt should likewise be worn, which makes equal and moderate pressure.

HECTIC FEVER, AND MARASMUS.

Not a few, both of the preceding and following complaints, are sometimes found to induce a confirmed hectic fever, and marasmus, called by some writers *atrophia lactantium*, though it often comes on too late properly to admit of the name. I have nothing new, indeed, to offer on this disease when it is far advanced, unless it be by way of encouragement to hope for a better issue in the hectic fever, under certain circumstances, than we are wont to expect.

This fever, as it is apt to arise from other complaints, is very often owing to their having been imprudently treated, or imperfectly cured, especially by suppressing some eruption or discharge from the skin, or incautiously stopping a purging during the time of teething. In such cases, and, indeed, whenever the hectic fever is of some standing, the mesenteric glands become indurated, greatly increased in size, and often suppurate; the belly getting large, though the limbs and other parts become emaciated, which state has been considered in the former chapter, and has been shown to be curable, or otherwise, according to the degree of induration, and the length of time it has existed. But there is sometimes a threatening appearance of hectic fever, where, nevertheless, nature effects a salutary and wonderful change, and will restore the emaciated infant as from the very jaws of death. And this, indeed, is often the work only of nature, art doing no more than superin-

tending, and preventing her being counteracted by the use of improper medicines or diet.

Nature alone will, indeed, oftentimes effect wonders for infants, and far beyond any thing to be expected in adults, if she be not officiously counteracted. And the reason is obvious; it being well observed by a late equally good writer and physician,* that "there is, in truth, a greater luxuriancy of life and health in infancy than in any other period in life. Infants, it is acknowledged, are more delicately sensible to injury than those advanced in life; but to compensate this, their fibres and vessels are more capable of distension, their whole system is more flexible, their fluids are less acrid, and less disposed to putrescence; they bear all evacuations more easily, except that of blood; and, which is an important circumstance in their favour, they never suffer from the terrors of a distracted imagination. Their spirits are lively and equal; they quickly forget their past sufferings, and never anticipate the future. In consequence of these advantages, children recover from diseases under such unfavourable symptoms as are never survived by adults. If they waste more quickly under sickness, their recovery from it is quick in proportion, and generally more complete than in older people; as diseases seldom leave those baneful effects on their constitutions, so frequent in adults. In short, a physician ought scarce ever to despair of a child's life while it continues to breathe." In further support of this sentiment, it may be observed, that their complaints are not often attended with acute fever, like those of adults; which, however salutary in some instances, is, from mismanagement or otherwise, more commonly disposed to break up the system than to rectify the machine.

The above-mentioned salutary turns in the true hectic fever, as far as I have observed, are chiefly in that species of it arising from worms, or teething, and in which I have known recoveries after hope had long been given up, and all attempts been laid aside. There is, indeed, an atrophy in infants for want of the breast, or from the unsuitableness of it, (which is

* Dr. Gregory—Comparative View of the State and Faculties of Man with those of the Animal World. 1785.

the true *atrophia lactantium*,) or of whatever else may be the child's ordinary food, as I have instanced in another place; but this is not usually attended with fever, and is to be cured merely by making that change, which the nature of the different occasions points out. Harris recounts some remarkable recoveries in what he calls the *atrophia verminosa*, and attributes the cure to the free use of the *hydrargyrus cum sulphure*, carefully prepared, but I have seen none so marvellous as in the *atrophia dententium*. In this I have known children, after being reduced by purging, and other complaints, lying for three months together in the cradle, scarcely fit to be moved, with continual fever, flushed cheeks, emaciated countenance and limbs, a large belly, incessant cough, and almost without taking any nourishment, recover, in a few days, upon rapidly cutting half a dozen teeth.

After what I have said on the true hectic fever, it will not be expected that I should offer much on the head of medicines; I shall, therefore, only observe, that the chief object in this advanced stage of the disease is an attention to the state of the bowels. This will be found to vary frequently; sometimes calling for restringents, and at others, opening remedies. In a view to the former, Sydenham's rhubarb-beer* is a very good medicine. Also, purging with mercury, if that has not already been done, should even now be attempted, since children in this state will often bear stronger doses of purging medicines, and more frequently repeated, than under any other circumstances; to these may be added, the artificial Seltzer, or soda water. Attention, likewise, should be paid to the diet, which ought chiefly to be of milk, rice, semolina, and such like, with light puddings; but, above all, children should enjoy plenty of fresh air, and take as much exercise as their degree of debility may admit of.

* Take of choice rhubarb, sliced, two drachms; let it be put into a glass bottle, well stopped, with a quart of small beer, or any other liquor the child may make use of. This medicated beer is to be his ordinary drink. When this quantity is drunk, a second, and a third quart of beer may be poured on, as before; after which the rhubarb will commonly have lost its virtue. Should the beer first poured on be too much impregnated with rhubarb, and purge too much, another pint may be added presently after the first is drunk up.

[Marasmus, or wasting, in children, is generally the consequence of antecedent disorders, and a portion of that continued chain of morbid action commencing in faulty organization, or in functional derangement, and terminating in organic change. Most of the early symptoms are referrible to debility, manifested principally in the digestive organs, and to asthenic inflammation of the digestive mucous surface. The symptoms, then, are generally those of the two states above mentioned, aggravated by their complication. During the whole progress of the disorder the flesh and strength waste, the fat is absorbed from every part of the body, and the bones are seen distinctly; the change in the face is most remarkable, the skin becoming wrinkled and pendulous, the countenance resembling that of an old worn-out man with a wig on; the chin and nose sharp. After the fat is absorbed, the muscles waste, the skin is wrinkled all over the body, and if it be pinched into folds it will remain so; digestion is arrested; the food goes through the same process it would in a heated bag; the stomach and intestines become distended with flatus; the stools are most intolerably offensive, and occasionally contain worms. The food at length is thrown up, debility gradually increases, and if relief be not obtained, death, preceded by extreme emaciation, ensues.

Post-mortem appearances.—The glands of the mesentery are found in various stages of disorganization according to the duration of the disease; in the earlier stages they appear red, and are somewhat increased in size and density, and at a more advanced period they are in mass as large as an infant's head. Subsequently tubercular matter is deposited either within their substance or on their surface, the true glandular structure becoming gradually lost in the morbid deposit. In one case they were so enlarged in mass as to press on the descending aorta, and prevent the passage of the blood; the child dying with symptoms of compressed brain. Minute tubercular deposits are found on the surface of the liver, under the peritoneal coat; various patches of inflammation on the peritoneum; occasionally large omental tumours, and various appearances of disease of the abdominal viscera. Tubercles in

the lungs and the bronchial glands are a very frequent accompaniment.

The prognosis should always be guarded, as the disease rarely exists in a simple form, and as the tendency to go on by slow and insensible degrees to a fatal termination is very great. No hopes of recovery should be entertained when it is complicated with disease of the lungs, or with chronic peritonitis, or inflammation or ulceration of the mucous membrane of the intestines, or scrofulous disease of the vertebræ. On the other hand, in the absence of these complications, much may be done under the judicious use of medicine, appropriate diet and regimen, and the advantages of a well chosen place of abode; and taking into account the youthful age of the patients generally, often apparently hopeless cases recover.

Treatment.—The indications are—1. To remove the morbid secretions and ill-digested matters from the bowels; 2. To support the constitutional powers while we endeavour to restore the digestive organs and the mesenteric glands to their healthy functions and conditions; 3. To allay irritation, and obviate all those causes which tend to aggravate the complaint. To fulfil the first intention, a purgative should be given, which acts briskly and quickly, and least reduces the strength, as calomel, followed by a dose of rhubarb and sulphate of potash, or the *decoct. aloes comp.*, with *tart. potassæ*, or *tinct. jalapæ*. With a view to the second intention, some aromatic bitter, or light tonic, should be given, combined with volatile alkali and the iodide of potassium.

Vegetable infusions are borne better by weak stomachs than medicine in substance. The strength of the tonic should be gradually increased, and where a sedative is required, the tincture of hyoscyamus, or hop, may be usefully added. The diet should be light, nutritious, and unirritating, taken in moderate quantities, and the intervals between the meals duly regulated: in older children a small portion of wine may be allowed. The tepid salt and water bath should be used daily, with friction to the surface of the body generally; and every night and morning the abdomen should be well rubbed with a stimulating embrocation, combined with some *tinct. iodinii*. Above all, coun-

try air and sea bathing should be enjoined, alternating, as for instance, between the chalybeate springs of Tonbridge Wells (or others) and the sea coast. Warm clothing should be worn, with flannel next the skin, and exercise taken in the open air short of fatigue. When the nights are restless, and the biliary secretion deficient, small doses of the *hydrargyrum cum cretâ*, combined with *pulv. ipecacuanhæ*, may be given at bedtime. Latterly the preparations of iron should be given, of which the *vinum ferri*, the *ammonio tartrate* and iodide are very appropriate. While these means are employed, the bowels will generally require due regulation by means of narcotics and astringents when they are too relaxed, and of stomachic purgatives when they are costive.—H. D.]

FEBRIS SCARLATINA—WITH OR WITHOUT ULCERATION OF THE THROAT.

Whenever the scarlet fever becomes epidemic among adults, children rarely fail being attacked by it, in great numbers, and frequently sink under it. It is, indeed, rather a child's disease, and very contagious among them. It has engaged the pen of the most able physicians, and is therefore well understood in this day, and needs only, on this occasion to be adverted to as one very incident to children, and to have its most approved method of treatment briefly pointed out.

The scarlet fever, with ulcerated throat, has, perhaps, been distinguished in too refined a manner, by some writers, into the scarlet fever, with malignant ulcerated throat, and the malignant sore throat, with efflorescence, or redness on the skin. But such distinction, it is apprehended, is needless, since the experienced practitioner will always be guided by the degree of tendency in the system either to an inflammatory or putrid diathesis; and the less experienced will only be perplexed by multiplied distinctions.

One observation, indeed, may be offered on this head, which is the propriety of distinguishing the mild scarlet fever (in which the throat is much inflamed, and slightly affected with superficial and white foulness, rather than slough,) from the

more malignant kind, in which the tonsils are less swelled and florid, and exhibit the precise complaint by some practitioners termed the *angina maligna*, with efflorescence on the skin. An error in this respect has certainly led less experienced practitioners to administer both bark and wine too early and liberally in the mild scarlet fever, which has thereby degenerated into a low remittent, bordering on hectic; and unless the treatment has been changed in a little time, has endangered the life of the patient.

The mildest species of *scarlatina anginosa* should also be carefully distinguished from the true inflammatory affection of the tonsils, which it will sometimes resemble in its first stages; but the genuine marks of the two diseases, and the cast of the epidemics reigning at that time, will direct the attentive practitioner, who will, in less certain cases, take a middle course in his method of treatment, till the characteristic symptoms of either shall become more evident.

There is, however, a scarlet fever that is not attended with any affection of the throat, and was long ago described by Sydenham,* though not much insisted upon by later writers, which is attended with a harder pulse, and other symptoms of an inflammatory disposition; but nevertheless, in every instance that I have met with, calls for the same general treatment, only more cautiously adapting the necessary cordials and tonics to the degree of fever, especially in the commencement of the complaint. There is sometimes sore throat, without any efflorescence on the skin, which form of the disease has been called *scarlatina faucium*. We believe that the *s. simplex*, *s. anginosa*, *s. maligna*, and *s. faucium*, are merely varieties of one and the same disease.

The febris scarlatina of every species begins with the common symptoms of fever, often with languor and disposition to fainting, sickness, a quick pulse, and pain in the head. The eyes are inflamed, and where the throat is affected, there is frequently a stiffness of the muscles of the neck very early in the disease, which is soon followed by some difficulty in swallowing. The affection of the neck should be carefully inquired

* See also Withering and Cullen.

into, especially in younger children ; the soreness of the throat being sometimes not complained of in the most severe attacks of the disease, until but little prospect remains of any mode of treatment being attended with success ; a circumstance I was early in practice much astonished at, by finding children swallowing with apparent ease, and denying having any soreness of the throat, when I have found the tonsils both tumid and covered with specks. The fever generally increases in the evening, and is often accompanied with transient fits of delirium ; but some remission takes place towards morning, with sweating ; and on the second or third day, the efflorescence appears on the skin, and generally first on the face, neck, and breast.

At this time the parts tumify, especially the hands and feet ; and the patient complains much of pain in the head ; is comatose, or very restless, and is at times delirious : the tongue is in the beginning very white and dry, afterwards becomes foul, and then of a florid red. About the fifth day there is usually a remission of fever, and the eruption then beginning to scale off, disappears about the seventh. If the disease has been violent, the patient is about seven days more in a low state ; and it is oftentimes a fortnight longer before he recovers his strength and spirits, and in some cases is distressed with foul abscesses on the outside of the neck. In other instances, after the efflorescence has dried off kindly, an appearance resembling the true gangrene has sometimes seized the whole soft palate, and the fever has been rekindled : but the parts recover their natural appearance after a few days, without any eschar being thrown off.

The limits of this work allow me only to observe, that the method of cure being directed to the two indications of the general diathesis, and the affections of the throat, the nature and extent of these must ever be kept in view, and the system be duly supported. Should the body be costive at the time of the attack, an opening medicine should be given previous to the administering of bark or cordials. The throat should be often gargled, or rather syringed, with mucilaginous infusions or decoctions, rendered more or less stimulant ; such as the

decoct. hord. with *mel. rosæ*, warmed with *spir. ammon. comp. tinct. myrrhæ*, *decoct. rad. serpent.* or other such like preparations: though the quality of the gargle is, perhaps, of far less importance than its being frequently made use of, which is absolutely necessary, especially in young children, in order to keep the mouth tolerably clean; otherwise the difficulty of deglutition will be greatly increased, as well as the morbid mucus be conveyed into the stomach. On this account, also, the patient ought to wash his mouth previously to taking his medicines or drink.—In many cases, where the parts are in constant pain, syringing the throat frequently with warm water, is found to administer immediate relief.

In the *scarlatina simplex* the symptoms are generally so mild that it is only necessary to confine the patient to bed, to keep the apartment cool, to regulate the bowels by aperients when required, give saline or cooling drinks, and enjoin abstinence from animal food, so long as there is any febrile disposition.

In the *s. anginosa*, or where the fever sets in more violently, the application of leeches to the head or throat, or even a moderate bleeding from the arm where the patient is plethoric, has been recommended, and will tend to diminish the excitement and tendency to visceral disease; but this should be done at the onset. In all cases, we believe, an emetic followed by a brisk purgative of calomel, and some aperient, as *pulv. jalapæ co.*, or sulphate of magnesia, with infusion of rose, will be useful. Cool air should be freely admitted into the apartment, and the surface of the body, when hot, should be sponged with cold vinegar and water. Where there has been no local congestion, we have seen the cold affusion act like a charm. The solution of carbonate of ammonia, or rather saline, with an excess of volatile alkali, the chlorate of potash, or the mineral acids, will be most appropriate medicines, regulating the bowels by mild aperients. When the general fever has declined, mild nourishment, and a more tonic plan must be substituted, and then the tepid sponging or bath will be beneficial.

In the fourth volume of the Medical Gazette, Messrs. Taunton and Williams, of Bromley, write in high praise of the following solution of chlorine, or chlorine mixture. ʒii. of the

chlorate of potash are to be dissolved in ℥ii of hydrochloric acid, previously diluted with ℥ii of distilled water. The solution must be immediately put in a stoppered bottle, and kept in a dark place. ℥ii. of this mixed with a pint of distilled water constitute the chlorine mixture, of which a table spoonful or two, according to the age of the patient, may be given for a dose frequently.—*Watson's Lecture on Scarlet Fever.*

This fever, especially when epidemic, being almost constantly of a low type, the physician must not trust to saline draughts, or other medicines of that class, without the addition of the *conf. aromatica*, *radix serpent.* or the bark, in one form or other. A moderate quantity of wine likewise, according to the age and other circumstances of the patient, should be given with the food, which should consist of whey, caudle, and such like thin and nutritious aliments, with plenty of barley-water, or gruel, with a view to promote a moderate perspiration.

Should the affection of the throat, therefore, be evidently inflammatory, or should a case occur where the fever may seem to be of that kind, (which may be better ascertained by the hardness of the pulse than any other symptom,) it will very rarely bear bleeding, even in the beginning of the disease; as symptoms of debility generally attend in some period of the scarlet fever, and will allow only of that middle course of treatment hinted above.

In a general way, a cordial plan is required throughout the disease, and where the throat is much affected, either with sloughs, or total blackness, the bark is indispensably necessary, however thick and florid the rash, or however hot and dry the skin may be; the bark, in moderate doses, as it were, extinguishing the fever in the milder species, above every other remedy, (when evidently called for,) and in the more malignant it supports the system, till the regular stages of the fever are accomplished, and a perfect crisis is formed. Young children take it very well, especially the soft extract, dissolved in a strong decoction. Should it be disposed to purge the child, a little of the *spirit. cinnamomi*, or a drop or two of the *tinctura opii*, should be added to it; or if the child,

on the other hand, should be two or three days without a stool, a laxative clyster should be injected. Where delirium attends, a few drops of laudanum are often very serviceable. If there is much external swelling about the neck, blisters to the part are frequently very useful.

A very unpleasant turn of the complaint is a secondary fever, which has already been hinted at, as being sometimes the consequence of administering bark and wine too early, or too liberally, in the milder scarlatina. In such case, upon the disappearance of the rash, the limbs, especially the hands, continue swollen, and a general soreness takes place; the patient loses all appetite and strength, and a tendency to hectic fever supervenes. The bark in this case is no longer useful; but soft demulcent medicines and light cordials should be administered, with asses' milk, and a light nourishing diet, if the pulse be not full; costiveness should likewise be obviated, and country air had recourse to, if the patient should not soon appear convalescent. If the fever be considerable, purging with calomel, of which I can scarcely speak too highly, is acknowledged also, by most physicians, to have an immediate good effect, and should be repeated as long as the fever continues: a small bleeding, also, where the pulse is full, or hard, is sometimes necessary; and a critical bleeding from the nose, though in a very small quantity, having sometimes instantly abated the fever, when the state of the child has appeared very hazardous, and the prostration of strength been considerable. Anasarcous swellings of the extremities, and sudden effusions into the cavities of the chest and abdomen, are by no means uncommon terminations of scarlatina, particularly among the poorer classes of society, where the accommodations and diet of the sick are not favourable to good recovery —S. M.

FEBRIS MILIARIS, OR MILIARY FEVER.

I shall be brief on this complaint, which does not seem to be so strictly a disorder of young children as of adults, unless from contagion: though I have seen one or more instances of it,

where no other person in the family has been so affected, and without its spreading to any other.

The *miliaria*, or red eruption, is preceded by the usual symptoms of fever, together with much itching of the skin, and a very profuse perspiration; which, however, procures no remission of the fever until the eruption takes place, which is at the latest on the third or fourth day. It very much resembles the measles, but is a little elevated above the skin, giving it a very rough feel. It is sometimes intermixed, from the beginning, with very small crystallines, which, on the other hand, often do not appear for a day or two afterwards, and come out in successive crops, especially if the child be kept over hot. Some of the red eruptions are often larger than others, and resemble those in the scarlet fever, with which the miliary rash is also sometimes thought to be mixed, in seasons when eruptive complaints are very rife.

Previous to the eruption, as well as sometimes afterwards, the patient is usually very thirsty; is hot and cold by fits, and the breathing is short and difficult. The urine is high-coloured, there is a slight delirium, and sometimes a sore throat, especially where the eruption is broad and very florid.

Children generally revive as the rash comes out freely; but unless the complaint be very slight, the fever is rekindled, and they acquire no appetite for food until the eruption begins to turn dry.

This fever being of the low kind, is attended with great languor, and calls for support; on which account both the medicines and diet should be of the cordial kind. White-wine whey, and wine in the panada and sago, in proportion to the degree of debility, are generally necessary, even for children of only a year or two old. The saline draught, with *confect. aromatica*, and *mistura camphorata*, is a good general medicine: and if the symptoms are more aggravated, the bark, volatile alkali, and the *spir. æther. vitriol. compositus*; blisters too are often very useful. A stool should be procured once a day, by means of a clyster, or a little rhubarb; and plenty of drink be allowed, which may be slightly acidulated, and at

times taken cool. The chamber should be kept airy, but the child screened from the wind, and be confined to the bed, until the rash disappears.

If on the rash dying away, which, in the milder species is in three or four days, no fresh eruption should take place, the appetite and spirits soon return; and only a little rhubarb, or other gentle laxative, is required, with the usual cautions in regard to diet, so necessary for every convalescent, and especially children, who have no discretion of their own. But if fresh crops appear, and the fever returns, the former plan must be continued: but if without fever, a few doses of physic, and quitting the warm bed, will probably put an end to the complaint.

CYNANCHE PAROTIDEA, OR MUMPS.

This is a tumour of the neck and throat, giving that peculiar cast of countenance from which the complaint has acquired the English name.* It is usually only a slight disorder in children, but as it advances, the skin becomes inflamed, putting on a light damask-rose colour; but the parts very rarely suppurate, which is the more remarkable, as the disorder seems to be situated in the cellular or adipose membrane. This, however, does sometimes happen, but the abscess usually heals kindly.

It is a complaint rather of young people than of infants; but frequently attacks children of five or six years of age. It is certainly contagious, and is often an epidemic disease. It begins with the common symptoms of fever, which are usually slight, but the tongue is frequently covered with thick fur, or is very white. The patient complains early of a stiffness and pain of the neck, and generally the next day of a soreness of the throat; but this seems oftentimes to be merely symptomatic, the tonsils being rarely inflamed. At this time a fulness of the neck may be discovered, which gradually extends to the throat, and the parts become tender to the touch, and in some instances the pain is exceedingly great, and

* [Mumps; sullenness, silent anger.—*Johnson*.]

recurs suddenly with almost regular intervals. The tumour generally continues to increase for two or three days,^{*} and then as gradually subsides.

In general, very little medical treatment is required, it being sufficient to confine the patient to the house; at most, to give night and morning a few grains of the pulv. contrayervæ com. with, or without, a small proportion of nitre, and to procure a stool once in twenty-four hours. But should an unusual degree of fever attend, as is more common in such as are advancing towards puberty, bleeding will be found necessary in the beginning, and the patient should be kept in bed for the first or second day, and take a saline draught with nitre, once in six or eight hours. On the other hand, should it be attended with any uncommon langour, the conf. aromatica may be given instead of the remedies before mentioned. When the swelling is thoroughly subsided, two or three gentle laxatives may be administered at convenient intervals.

In a few instances, after suppuration has taken place, and the sores are healed up, a hardness of the parotid and maxillary glands remains, which is usually soon dispersed by rubbing a little mercurial ointment, or sometimes by only anointing with the common linimentum ammoniæ. Should it, however, prove tedious, a few doses of calomel, and common laxatives, should be exhibited, at proper intervals.

In adult males, or such as are growing up to manhood, the tumour of the neck has sometimes been found to subside very suddenly, without any abatement of the fever, and then the testicles have been as suddenly inflamed; which is attended with more pain and fever than the swelling of the neck, and is cured more slowly; upon this metastasis, bleeding is always proper, though these parts have never been found to suppurate.*

A translation from this part again, is sometimes very suddenly effected, and the irritation then generally falls upon the

* A swelling of the testicles, attended with pyrexia, but unaccompanied with any affection of the glands of the face or throat, was epidemic not long since at Wallingford, in Berkshire, as reported by Mr. Golding.

brain; and the worst consequences are justly to be apprehended. Every thing necessary and proper for the true phrenitis is then speedily to be had recourse to, and the tumefaction invited to the parts it has left; and until that can be effected, the patient will be in great danger. Such a metastasis is much more common in North America than in these islands.

HYDROCEPHALUS.*

This complaint is distinguished into the internal and external. Hydrocephalus, membranarum and ventriculorum. Either may occur singly, but both may exist in the same case, in various degrees. In the former the water lies upon the surface of the brain, over the pia mater, and is contained in the general cavity of the arachnoid; but in the latter it is seated much deeper within the ventricles. In Hydrocephalus Ventriculorum, which is the most common, and which *Meckel* designates the internal dropsy of the head, the water is collected in the bags of the arachnoid and vascular membranes, lining the internal cavities of the brain, and is contained in all or the greater number of these cavities in the same case.

Hydrocephalus is either acute or chronic, or of intermediate grades. It occasionally commences in an acute or subacute form, and insensibly and gradually passes into the chronic state. It is frequently congenital, in which case it is usually chronic, or soon becomes so.

When a child has inflammation within the head, it usually is denominated "hydrocephalus acutus," but, in its essential character, it is very much the same as the common phrenitis of adults.

The term hydrocephalus applies to one symptom or stage of the disease. Hydrocephalus then may be said to owe its origin to inflammation, which produces a collection of serous, lymphatic, or purulent fluid, or a mixture of these within the cranium or cavities of the brain.

Of the internal watery head.—This melancholy disorder seems not to have been distinctly known to the ancients,

[* There is a valuable paper upon this disease by Dr. Mills, in the Trans. of the Col. of Phys. in Ireland; vol. v. p. 350.—M. H.]

though there can be little doubt it must often have been met with; but the want of those frequent examinations of dead bodies which the moderns have made, deprived them of opportunities of distinguishing this disease from affections of the head, arising from other causes. Hieronymus Mercurialis,* who wrote in the beginning of the sixteenth century, was perhaps the first who mentions the disease as having its seat in the ventricles. Wepfer also just says, the water has been found in the cavities of the brain.† Boerhaave, Petit, and others, have likewise spoken of it; but no author, I believe, described it all accurately before Dr. Whytt, who wrote expressly on the internal watery head, anno 1768.‡ But it has not been generally noticed, that the water lies sometimes between the pia mater and the brain, as it is found to do in maniacs; and I have met with it both there and in the ventricles, in the same subject, and always in infants under two years old.

The hydrocephalus usually takes place between two and ten years of age; but I have known many instances of water in the head being found after death, in children under two years of age. I have noticed this early appearance twice in the same family; the infants also dying suddenly without any previous mark of the disease: but as no dangerous symptoms of any other kind attended, it can scarcely be doubted, that the water found in the ventricles was in these instances the true cause of the sudden death; as I am satisfied it has sometimes been in others, by producing a fit. This complaint, however, at whatever early period it may commence, is also found sometimes to take place later than the tenth year.

It may arise from falls and blows on the head, from scirrhous tumours and excrescences within the skull; a watery state of the blood, or a lingering illness. It may likewise,

* Opuscula Aurea, Lib. de Morbis Puerorum.

† Histor. Apoplecticorum.

‡ Since then Fothergill, Watson, Dobson, Quin, Rust, Withering, Percival, Cheyne, Abercrombie, Odur, Coindet, Guersent, Lallemand, Formey, Portenschlag, Golis, J. Clarke, Gooch, Yates, D. Davis, Bennett, Griffiths, have added much to our knowledge of this disease.

probably, be owing to pressure on the brain, and fulness of the vascular system from other causes, as conceived by Dr. Quin. I have, at least, met with one case, in which there were all the usual symptoms of water in the ventricles, and the late Dr. Warren, whom I met on the occasion, was fully of that opinion. But upon examining the head thirty-six hours after death, a great number of sharp points of bone were found, and especially of the spinous process of the os frontis, which was most uncommonly long and sharp. The vessels were all found very turgid with blood, and there were light, flaky appearances on the pia mater, similar to those found on the peritonæum, pleura, and other membranous parts in a state of inflammation. In this case, only half an ounce of water was found in the ventricles. A similar remark is made by Mr. Edward Ford,* who observes, that more remote causes may be an inflammation of the vessels of the pia mater, which may owe its origin to the measles, small-pox, scrofula, and other complaints; which may affect the brain in the same manner they do the mesenteric and other glands. As the disease may originate from such different causes, there can be no doubt that it may sometimes be a chronic disease, and its appearances very insidious. It appears, likewise, to be a family complaint in some instances, for I have known six children, born of the same parents, die successively of it at the age of two years, five of whom were afterwards opened. Children with a large head do not seem to be more subject to this disease than other children.

The attack is sometimes very sudden; but the complaint more commonly begins with the appearances of slow fever, especially in older children, with debility of the arms, and pains in the limbs, and frequently in the upper part of the neck. It has also been remarked, that, in the commencement, the child has appeared to be more acute and lively than ever before; but the spirits decline as the disease advances. After a while, the child is suddenly seized with pain in the head, and generally in the fore part, and retches once or more;

* London Medical Journal, vol. 2, part 1.

it becomes heavy and dull; can bear no posture but that of lying horizontally; the pulse becomes irregular, but usually very slow; in the progress of the disease the faculties and senses are impaired, and the eyes offended by the light; the patient sees objects double, and becomes delirious. As the disease progresses, the pulse grows frequent, the cheeks become flushed, the pupils of the eyes are dilated, the stools and urine come away involuntarily, and the patient lies sleeping, or is convulsed, and at times in great pain.

In the youngest subjects, I have known it begin with a cough, quick pulse, and difficulty of breathing, attended with circumscribed flushed cheeks, as in teething, recurring on every little exertion; with continual fever and costiveness, and sometimes a discharge from the nose and eyes. Other symptoms, indicative of the disease in very young subjects are, a hand often put up to the head, or lifted upwards, and waving about; vomiting; costiveness; expressions of anxiety, and dislike to be moved: at other times, an unmeaning look, and marks of insensibility; the fingers often clenched, and hands tumid; drowsiness; picking of the nose; and grinding of the teeth during sleep, as in the case of worms: the eyes are in many instances turned towards the nose. The pupils are often not dilated till near the close of the disease, and such young patients sometimes hear and comprehend, and take food to the last, and die suddenly upon the decline of the febrile symptoms, when they have been thought to be recovering. These, and other symptoms, however, laid down as indications of water in the brain, are, in some degree, common to other diseases of children, especially the dilatation of the pupil and sleepiness, in fevers arising from foul bowels, which, I am persuaded, are sometimes mistaken for the fever of hydrocephalus. In such cases, some children have been erroneously thought to have recovered from this disease, especially if calomel has been administered, though with another view; while others have perished from improper treatment, and mistaking their complaint. Perhaps, the most decided symptoms early in the disease (at which time it is of the most importance to ascertain it) are, an inclination to lie on the

back, and unwillingness to be moved, and an increase of pain in the head upon being raised from a supine to an erect posture, but especially an almost constant drowsiness, and a tendency to fall asleep, after being roused by being lifted up, or otherwise disturbed. Sometimes, however, neither these, nor other decided symptoms, are found to take place until the second stage of the disease. From its varied mode of attack it has been arranged into three forms.

First,—The nervous or gradual form is the most frequent in which hydrocephalus is met with in practice. The premotory symptoms are very various, and often exist for weeks or months before the disease assumes its true character. It commences with a protracted or slow development of symptoms of the first stage, of occasional head-ache, accompanied with derangement of stomach and bowels, with evening febrile exacerbations before the occurrence of any acute symptoms. The early symptoms are more apt to be overlooked, or falsely interpreted, if the child be recovering from some previously debilitating disorder; or if it be of a weakly habit, and frequently ailing. After a time the child seems unable to support the weight of its head, which begins to enlarge, the sutures becoming in infants and young children gradually separated, by which the symptoms are sometimes relieved. On some few occasions the disease has gradually disappeared with the increasing strength of the child, leaving no traces of the affection. More commonly the disease progresses gradually, the head-ache becoming more severe, and recurring more frequently, than common head-ache; it is characterised by a sharp shooting pain recurring at intervals: sometimes it affects one side of the head more than the other. Now and then children will awake from sleep and shriek out with pain, or as coma comes on, it will be accompanied with habitual moaning—both very characteristic signs of the disease—the pain in the head becomes complicated with vomiting, all the symptoms being aggravated by motion. The duration of this form is from three to six weeks; and if the early symptoms are taken into consideration it is much longer, and so variable, as scarcely to be determined. In infants the early symptoms

are so trifling, that no alarm is taken till the child is in a state of stupor, which soon lapses into coma, generally attended by squinting. In older children, as from seven years to the age of puberty, it begins as a common feverish attack, the head-ache is slight, sometimes scarcely noticed, and soon ceases; the appetite is defective, and various uneasy sensations are complained of. These symptoms occur by paroxysms for some weeks; when the head ache, though still slight, becomes constant, accompanied by a peculiar unwillingness to be disturbed, and a degree of weariness without any sufficient manifest cause. The pulse will become almost natural, the tongue clean, and the appetite improving. The symptoms of general febrile disturbance do not, however, accord with the permanence and degree of head-ache. In this way several days, or a week or two may elapse, till at length the head-ache increases, accompanied by a degree of stupor, and a slow pulse, and then the disease becomes fully developed.

Second.—The acute, febrile, or inflammatory form.—The precursory symptoms in this are of short duration, and sometimes so trifling as not to be noticed. After the child has been drooping for a short time, the severe symptoms pourtray themselves most abruptly, and are from the onset referable to the head; there is considerable excitement, fever with slight irregular remissions, a rapid, small, and hard pulse, furred tongue, severe head-ache, increased heat, particularly of the forehead and nape of the neck, and tenderness of the scalp, intolerance of light and sound, the eyes shrink from the light, the pupils are exceedingly contracted, stupor or unwillingness to be roused, alternating with extreme restlessness, and violent screams, and pains of the head and belly, brilliancy of the eyes, tenderness of the abdomen, great irritability of the stomach, retching on the slightest alteration of position, with this a remarkable disordered state of bowels; in the intervals a peculiar despondent, vacant, and heavy expression of the eyes, a pained and terrified look, sometimes tortured by their inward feelings, so that no one can soothe them—the countenance is generally pale, and there is diminution of the secretions and excretions characteristic of this form of the malady; the

symptoms now become rapidly merged in those of the second stage, and afterwards the progress is similar to the first form, the stages being more distinctly marked, but more commonly of shorter duration. This form is generally idiopathic, and though the most regular in its progress, it is not so common as either of the other forms of attack.

Third form—Consecutive or secondary hydrocephalus.—To this variety may be applied the term conversion of disease, or defect of crisis, or waterstroke of Golis. To this form belong all those depositions on the brain which supervene on any acute disease, but more so on any eruptive disease, particularly scarlatina, or which follow difficult dentition, which occur early in hooping cough, and also those convulsions which follow the sudden cessation of chronic or habitual discharges, or the suppression of natural secretions, or in consequence of obstructed evacuation from an excreting organ—(to this adults are liable).* The mode of attack varies—in the majority of cases the early symptoms are so slightly marked as not to be noticed, or are considered as belonging to the disease of which they are consecutive; and the first indication you have of this very dangerous form of hydrocephalus is the occurrence of convulsions or paralysis, succeeded by deep coma; in other instances it sets in with violent head-ache or delirium.

The obscure character of this form depends not so much on the insidious nature of the disease as on the rapid manner in which it is established, and the suddenness with which effusion takes place. This variety hardly ever occurs in an idiopathic form.

Though it is sometimes a very short disease, and at others of many months' standing, it seems always to be divided into three stages, which are best distinguished by the state of the pulse. In the first, the pulse is always quick, as in other complaints attended with fever: but the true nature of the disease is often overlooked till the next stage, in which the

* See Sir H. Hallford on the uncertainty of prognosis. Transactions, College of Physicians. 1820.

pulse is slow, irregular, and often intermitting; and in the third it becomes again very quick, and usually regular.

Dr. Cheyne makes also three stages, which he considers marked by the state of the nervous system. First stage—the period of increased sensibility; when every stimulus produces an impression more than proportionate to its common effects. Second stage, that of diminished sensibility; the child is lethargic, not easily roused, the pupil is dilated, the pulse slow, and the bowels obstinately costive. Third stage—of palsy and convulsions; in which there is squinting, rolling of the head, stupor, convulsions, with a rapid thready pulse. Dr. Golis divides it into four stages, named according to what he considers to be the state of the brain in each. First—into that of *turgescence*, corresponding to that of the premonitory symptoms. Second—*inflammatory*. Third—*effusion*. Fourth—*palsy*. The two last would appear to be almost the same. Dr. Watson considers that, for all practical purposes, it would be sufficient to make *two stages* only of the disease. First—that of *inflammation*. Second—that of the results or products of inflammation as (the symptoms of) *softening*, and from the *effusion of serum*.

Cases often occur that would baffle all attempts at classification; convulsions, instead of being among the last, occur among the first symptoms; neither is the state of the pulse, at any period, an infallible index, either of the stage of the disease, or state of the brain.

First stage.—After a period of uncertain duration head-ache becomes more aggravated, and is marked by paroxysms of severe shooting pain, making the child cry out, or shriek suddenly, or sometimes by a general shudder of the whole body. If able to describe the seat of pain, it will often be referred to the forehead, or occiput, and on some occasions to one side. Sometimes the child will moan or cry continually, and apply the hand to the head, exclaiming, “Oh, my head!” In other cases there is no complaint, or any distinct indication of head-ache throughout the disease. The plaintive moan, or cry, of children in this stage of the disease is so peculiar, that some have considered it pathognomic. The occurrence of sponta-

neous vomiting, along with the pain in the head, is very general, and characteristic of the true nature of the malady. The vomiting in some cases is incessant; in others occasionally only. The vomiting and head-ache are both aggravated by motion, particularly by the erect posture, so that the child always is inclined to lay down. Nevertheless, for the most part the restlessness is extreme. There are alternate chills and flushings of the face, but the prevailing aspect of the countenance in most cases is pale. Any disturbance or exertion is followed by a transient florid blush of the cheeks. The pulse is mostly frequent, and has a degree of sharpness about it; the sleep is disturbed, with grinding of the teeth, and the patient wakes or starts up in apparent terror, or with a scream; the head is hot externally; the temperature of the surface of the body is seldom much increased, frequently below the natural standard; the skin is generally dry and parched, and there is a peculiar dryness of the nose and lips; the brows are knit, the pupils of the eyes are generally contracted, the eyelids partially closed, and the patient, annoyed by light or sound, appears unwilling to be roused. When questioned, although they do not readily reply, correct answers are returned. The tongue is coated with a white or yellowish fur, the breath is peculiarly offensive, the bowels variable, mostly costive, occasionally purging and griping, the stools before the use of medicine are pale and clay-coloured, subsequently, unnatural, green, pitchy, and tenacious; the urine is scanty and turbid. There is commonly fulness of the abdomen, and tenderness on pressure, particularly over the epigastric and right hypochondriac regions. This stage is of variable duration, from a few hours to seven days, and extending, in some rare instances, to ten, or even twelve. When the symptoms gradually change, unless convulsions supervene, and impart a new character to the malady, the disease passes into the

Second stage.—Now the patient loses all irritability. Instead of appearing reckless, and throwing about the arms and legs, a state of drowsiness and stupor succeeds. Prostrate on the back, with eyes half open, the countenance is vacant and unmeaning; the pupils are dilated; and if carefully watched, they will fre-

quently be observed to fluctuate or oscillate, both pupils not acting in unison; unequal in size, and scarcely sensible to light; squinting supervenes, the eyes being generally directed inwards; the pulse becomes slow, intermitting, and irregular, but is accelerated on the smallest exertion or change of position, such as removing the patient from bed. There is almost constant moaning, with occasional screaming fits, during which it has been thought that effusion of serous fluid has taken place. Convulsions of the most distressing kind succeed, in which the head is frequently thrown back, and the spine becomes arched. This does not, however, occur in all cases to such extent. The urine and fæces pass involuntarily, or partaking of the general torpor, the bowels frequently remain obstinately costive; alternate paleness and flushing of the cheeks become more marked, and the conjunctivæ injected. The muscles of one or other of the extremities often remain for many hours or days in a state of permanent rigidity. At length relaxation takes place, and the opposite side is frequently attacked, or complete paralysis, or hemiplegia, supervenes. The hands are usually contracted, and the thumbs generally rigidly grasped within them; emaciation proceeds rapidly, and the abdomen falls in. Marked remission of symptoms, deceitful changes, and delusive appearances of amendment, variable as to extent and duration, occasionally take place. The patient regains the use of its senses, and a hope of recovery arises; but ere a few days elapse, a deeper state of coma ensues, and should the sufferer not be cut off within a week or two, these insidious symptoms of improvement may occur more than once. Coma now becomes more intense, more profound, the pulse extremely rapid; upwards of two hundred pulsations in the minute are said to have been counted, irregular and intermitting; the hand perpetually rolls from side to side, one arm is tossed about, and the corresponding leg kicks off the bed clothes, while the limbs on the opposite side of the body are completely paralytic; partial and profuse sweats break out, particularly about the head, which frequently assumes a florid appearance; the cornea is obscured with film, the power of deglutition ceases, the breathing becomes ster-

torous, and the patient sinks into utter insensibility, or dies raving, or one violent convulsion ends the scene. In a few solitary instances only is life prolonged to the extent of several weeks, the pulse scarcely perceptible, the pupils collapsed, muscular power nearly extinct; the patient lays in an automatic state, with some faint and transient flushings, and now and then deglutition of small portions of food, until death takes place.

Statistics.—It would appear from the tables of the Registrar-General, and others, according to Dr. J. R. Bennett, that of the number of children that die of the more fatal diseases, that from four to five per cent. die of hydrocephalus. The different seasons have not much influence in the prevalence of the disease; it is rather more prevalent in the winter and spring than in the summer or autumn. It is observed to occur more frequently at certain periods, and to be influenced by meteorological peculiarities, as when influenza predominates among adults, and is then preceded by catarrhal fever, or affection of the external ears. It is more fatal among the dense population of cities and large towns than in the country. The greater mortality in these localities is not solely to be attributed to their influence on the children, but on their parents also; in some measure, therefore, to the increase of hereditary predisposition, one of the most important causes of the disease.

Influence of sex.—It is more prevalent in males than in female children, or in boys previous to the tenth year, and in girls after that age.

Influence of age.—It may occur at any age between the sixth month and twelfth year; it is more frequent between the ages of two and seven years; but rare before the second, or after the twelfth year.

Duration of the disease, depends on the mode of attack, the disposition or habitude of the patient, and the greater or less irritability of the brain, and on the treatment first adopted. After the symptoms of the disease are fully developed, it may last from fourteen to twenty-one days; sometimes for six or eight only; more commonly seventeen days; and occasionally for thirty days. The precursory symptoms may have existed

for several weeks without being noticed, or the more severe symptoms may be relieved, and idiocy, or chronic hydrocephalus follow. The mean duration, however, of the disease may be stated to be from thirteen to eighteen days.

There is a form of hydrocephalus which continues for many months, accompanied by headache, disordered digestion, sallowness of the skin, languor, and dulness; not much disorder of the intellect; the child swallows food as it were unconsciously; at length palsy, to a greater or less extent, with marasmus, takes place. This form is midway between the acute and chronic hydrocephalus, for the head enlarges a little, and there is a slight separation of the sutures: after death there will be found a larger quantity of fluid in the ventricles than after the acute cases; but not so much as in the chronic, particularly when congenital.

Morbid anatomy.—Appearances on dissection vary remarkably even in those who have died of the same form of the disease.

In some cases the vessels of the membranes of the brain, more particularly the veins, are distended with blood, with considerable adhesion between, and thickening of the membranes, minute and florid vessels on the pia mater, the space between the convolutions lined with thickened membrane; this turgid state of the vessels, or meningitis, occupies more frequently the base of the brain, with effusion of coagulable lymph beneath the arachnoid. The substance of the brain is mostly soft and blanched, the fornix often like a curd, or sometimes resembling soft pap, the choroid plexus is mostly pale, sometimes granulated; the turgescence of the vessels of the membranes is less, and there is more firmness and consistence of the brain the shorter the duration of the disease has been; it is then, also, more elastic, and expands on the skull cap being removed, so as to render it very difficult to replace. The medullary part is occasionally studded with small red points, or bloodvessels. This is more remarkable when the disease has supervened on whooping cough. In some cases masses of tubercular or caseous matter will be found imbedded in the substance. In one case where there was a deposition of

this kind, the size of a walnut, situated in the right lateral ventricle in the anterior part of the corpus striatum, the child, instead of bending the body backward during the convulsive paroxysm, as is more common, inclined his body forward, and stretched out his hands as if to ward off the approach of danger.

Fluid will be mostly found effused in the ventricles, and also along with the coagulable lymph, under the tunica arachnoidea, both above and below the base of the cranium, or the fluid flows out of the substance of the brain as from a sponge. Sometimes there will be little or no fluid found where great effusion was expected; it is sometimes taken up by the brain by imbibition. In some cases the brain has appeared perfectly healthy, as in a case reported by Mr. Abernethy.

A small quantity of fluid (the result of the halitus exhaled from the serous membrane) is always found after death; this seldom exceeds ʒj; where there is more than ʒij, it must be considered the result of morbid action. The more acute the disease has been, the less fluid will be found, and vice versa; the quantity found varies from ʒiij to ʒvj; in the more acute cases there will be seldom more than ʒiij or ʒiv. The fluid is mostly pale and colourless, and does not differ materially from that effused in other serous cavities. It contains a very small quantity of albumen, and is for the most part not coagulable. Where inflammatory action has been well marked, as after the weaker stroke, the effused fluid is always more turbid, containing a larger portion of albumen, and is coagulable. Other organs will frequently be found in a diseased state. Gastro-intestinal inflammation often co-exists with cephalic disease, particularly with meningitis, and the intestines will be found constricted as if from spasm, and intus susception of the small intestines; the surface of the liver red, vascular, abounding in minute vessels, now and then adhering extensively to the peritoneal covering of the diaphragm, and occasionally studded with white tubercles. The mesenteric glands are often enlarged with tubercular or caseous depositions in their substance. The bronchial glands and substance of the lungs will be also similarly affected.

Predisposing causes.—Until the infant has attained the first year of its age the brain is in an evident state of transition. The successive changes which take place in its appearance are, doubtless, connected with important alterations in its functions. The difference between the medullary and cortical part is at birth scarcely perceptible, the cortical part passing through different shades of pink, red, and brown, at length becomes of a reddish grey colour. At the completion of the first year the brain has acquired the general and more palpable characters of the adult. The subsequent changes are not so manifest, but no doubt it is still the seat of important alterations that are to fit it for its new functions. It is at this time that the tendency to hydrocephalus begins to manifest itself. Previous to the age of one year few cases occur; but from that age to the seventh year the disease increases in frequency.

The peculiarities in the constitution of the brain of children, and also the preponderance of the arterial over the venous system, as has been before remarked, explains the readiness with which any cause of irritation gives rise to cerebral excitement, from the foregoing state of the brain, and the process of ossification which is going on rapidly, as in the completion of the cranial bones and the formation of teeth, slighter causes may disturb the balance of the circulation, and produce inflammation, than under other circumstances. The predisposition may be found partly in original structure, consisting, perhaps, of a greater capaciousness of the blood-vessels of the brain, together with laxity of their coats, as in cachectic habits, and scrofulous subjects. All things considered, children of scrofulous parents (other things being equal) are much more likely to be affected. From some cause originating in the organ itself, or peculiarity of hereditary structure, as evidenced by the well known fact of many children of the same family falling victims to the disease. Projecting portion of bones within the head. *Precocious intellect*, and unusually lively disposition,—hence the pernicious effect of too early cultivation of the mind. *Morbid condition of the blood*, arising from protracted diseases of the biliary, urinary, or cutaneous functions, as after certain of the exanthemata, causing similar condition

of the nervous matter. Long-continued constipation of the bowels, interrupting the circulation in the abdomen; great terror and anxiety in the mother during her pregnancy. At Vienna, most of the children who were born immediately after the bombardment, in about ten, twenty, or thirty days after birth, were seized with convulsions, and died. Within the cranium were found traces of inflammation, and in the ventricles of the brain effusions of lymph and serum. Chronic hydrocephalus, when the stagnant fluid in the ventricles excites irritation, by which increased congestion in the brain is produced, is said not to be one of the rarest causes.

Among the exciting causes may be mentioned improper feeding, producing an excess of nutrition of the brain, or derangement of the digestive organs; obstructed evacuations of the bowels or bladder; suppressed secretion of the kidneys, mentioned by Sir H. Hallford and Abercrombie; sudden repelling of eruptions and chronic discharges,—hence the importance of substituting some evacuation or counter discharge; *violence*, as from blows or falls, which is a much more frequent cause than has been supposed, although not manifesting its effects for some time after; morbid sympathy with the abdominal viscera, as between the stomach, liver, alimentary canal, and brain: in these cases, though the affection of the brain is the immediate cause of the disease, it is in consequence of the inflammation, irritation, or deranged function of the liver, mentioned by Curry, Yeates, Thomson, Bayton, Cheyne. With regard to the alimentary canal, the supposition is strengthened from the relief which a course of purgatives affords where there is every reason to suspect the disease, and from the sickness of stomach, constipated state of bowels, and tenderness of the abdomen, which commonly prevails in head affections.

Painful dentition, or long continued irritation of any kind, hooping cough, worms, protracted diseases.—Whatever tends to call scrofulous disease into action, as insufficient food, exposure to cold, inadequate clothing, breathing an impure atmosphere.

The diagnosis is to be formed from a careful consideration of the previous history, the general condition and aspect of the child, and the train or succession of the different symptoms.

It is of considerable importance to detect the approach of hydrocephalus when the employment of remedial means have a chance of being successful. It is characterised in the early state by the extreme mutability of its symptoms. There is generally from the first a striking change in the countenance and actions; the complexion is at one time pale, at another, flushed; the patient now preternaturally quick and lively, then slow and inanimate, or torpid and comatose. At one time any noise causes alarm; an infant cannot bear being danced; it clings to the nurse as if frightened, or cries; at another time no occurrence or noise arouses it. The temperature of the skin varies with these conditions, in the one having an increased heat of skin, in the other a cool one. In the comatose state the child sleeps heavily, but not quietly, and it either whines or moans, or appears disturbed with dreams, or wakes screaming. The pulse and capillary circulation are constantly varying, without any assignable cause. At first the pulse is natural, then morbidly slow, latterly unaccountably quick: the respiration is unequal, and is easily disturbed; more commonly it is frequent, and is accompanied with occasional sighing: the stomach is for the most part very irritable, and the bowels disordered; (this spontaneous vomiting in hydrocephalus is thought to be characteristic of those cases where lymph is effused at the base of the brain, and around the medulla oblongata, at the origin of the par-vagus) with alternate craving for food, and obstinate constipation. With this there is usually head ache, or acute occasional pain. Although no complaint be made, it will be portrayed by the frequent application of the hand to the head, and a peculiar aspect of countenance, as a frequent frowning or knitting of the eye-brows, expressive of disturbed brain, or inward suffering. At one time there is a morbid sensitiveness of the eye and ear, with either an extreme contraction of the pupil, or immobility of it, with insensibility to both light and sound. The skin is sometimes hot and dry, at others bedewed with moisture. Children who can walk appear to do so insecurely, with a tottering gait, as if affected with vertigo.

Notwithstanding what has been said, the diagnosis in the

nervous, gradual, or insidious form of hydrocephalus, is made with great difficulty. This difficulty is increased where it is ushered in as secondary to other diseases, or, as it were, converted from them; or, again, primary disease of the brain may be overcome by the effects of diseased action in another part of the system, originally induced by disease of the brain. Thus in the course of infantile fever hydrocephalus frequently supervenes, and generally so insidiously, as altogether to elude observation almost up to the moment of its fatal termination; or incipient hydrocephalus may be superseded by dysentery. Hence in the acute diseases of young children every symptom which indicates cerebral irritation should be narrowly watched. Whenever indifference succeeds to increased irritability; vomiting and diarrhoea, to costiveness; and at the same time the urine is scanty, and the faecal evacuations unhealthy, and the ordinary treatment fails to restore them to the natural state;—when the child moans continually, or cries for hours together without any apparent cause; when it is sleepless, or sleeps heavily, and awakes frightened, or screaming, attention should at once be directed to the head: the subsequent progress of the disease will clear up the doubt, and show it in its peculiar character.

Hydrocephalus is distinguished from worm fever by the sluggishness and dulness which characterise the latter throughout. Worm fever also occurs more commonly in overfed, tumid-bellied, bad complexioned children, with voracious appetites, the bowels being easily moved, and the motions dark and copious, the urine pale and abundant, and the sense of sight and hearing unimpaired, and the sleep sound. From remittent fever it is distinguished by the uniform quickness of the pulse, and the absence of vomiting, except as an accidental occurrence; the regularity and complete remissions of the febrile paroxysms; the entire loss of appetite; and by the stools which, in remittent fever are clay coloured, yeasty, of a very offensive odour, with particles of undigested food. In the latter disease also there is general silence or dulness, with constant picking of the lips, which is peculiar to it, the hand being seldom raised above the mouth; and although there is occasional delirium, there is no want of consciousness on its subsidence.

In the inflammatory form the precursory symptoms are few, and scarcely noticed. From the first there is a manifest determination to the head, with great vascular action and considerable excitement of the cerebral functions, preternatural sensibility of the eye and ear to the stimuli of light and sound, a contracted and highly sensitive pupil, with a full firm pulse. There are sickness and vomiting, knitting of the brows, headache, and occasional screaming, great terror, starting at the slightest noise or touch, a hot skin, flushed face, scanty urine, and confined bowels. These are all marks indicative of inflammatory fever, associated with acute affection of the brain.

A train of symptoms resembling the foregoing occurs, during the precursory period or incubative stage of small pox, immediately preceding the eruption, but which is usually ushered in with rigors: these rigors rarely or never precede hydrocephalus. The previous history will sometimes assist the diagnosis, although it often is only rendered clear by the subsequent progress of the disease.

Hydrocephalus supervening on scarlatina is mostly accompanied by head ache, more or less severe and constant, a deficient secretion of urine, and anasarcaous swellings of the extremities; or it succeeds the sudden disappearance of those swellings; and if at the same time there be a furred tongue, attended by fever, these symptoms are indicative of congestion within the head, and will, if not speedily removed, be followed by convulsions, or coma.

It should be borne in mind that it is after the milder forms of scarlatina that hydrocephalus more frequently supervenes, and is induced by exposure to cold, or the administration of too stimulating a diet, and is chiefly characterised by the rapid manner in which it runs its course.

Whatever difficulty there may be in distinguishing the disease at its commencement, there can be none in its more advanced state, when the child lies rolling its head on the pillow, or sawing the air with one hand, while the opposite side is palsied; with a hectic flush on the cheek, the eyelids half closed, concealing the pupil, and the eye deprived of its

vivacity by the filmy appearance of the cornea, the complete dilatation of one or both pupils, and the suffusion of the conjunctiva; drawing long sighs, and frequently grinding the teeth; incoherent, or in a state of complete insensibility; with a burning heat of the skin, or bathed in sweat, and all these symptoms alternating with, and at last finished by, stertorous breathing and violent convulsions.

Prognosis.—This should always be given with caution, and for the most part, perhaps, be unfavourable. Yet the anticipation of such a result ought not to paralyse our efforts, for children frequently recover, although convulsions, paralysis, blindness, insensibility to sounds, unconscious evacuations, and other unfavourable symptoms, have existed some time. While the pulse continues steady, and the breathing natural, the most alarming symptoms should not prevent the use of active remedies. It should be borne in mind also, that the subjects of this disease have great recuperative powers, which circumstance should encourage us in our exertions. On the other hand, too favourable a prognosis should not be given, from any one favourable symptom, or combination of symptoms; for of all diseases, hydrocephalus is the most deceptive; since, as before mentioned, an apparent amendment occasionally takes place and lasts for hours, or even a day or two, in the course of this disease. Should, however, the signs of amendment continue for *three or four entire days*, after the use of actual remedies, reasonable hopes of recovery may be entertained.

When the disease occurs in comparatively sound constitutions, and in an inflammatory form, or after scarlatina, the hopes of recovery are greater. On the other hand, when it follows long continued ill health, or occurs in children of scrofulous constitutions, or in families where others have died of it, or after remittent fever, or during protracted convalescence, or when it steals on imperceptibly until it is far advanced, an unfavourable result must be expected.

When acute hydrocephalus supervenes on the chronic (perhaps from the effused fluid within the brain having acquired irritating properties) little good can be expected from the best remedies. Irritation of the mucous membrane of the in-

testines, in connexion with an excited or non-secerning liver, oppose insurmountable difficulties to the curative process, as this state of the abdominal viscera not only appears to prevent the operation of remedies, but in some constitutions to cause and maintain the diseased action of the brain. The prognosis is favourable when the pulse, from being accelerated, diminishes gradually in frequency; or from being preternaturally slow, undergoes a gradual and moderate increase in frequency; when, with these symptoms, a general abundant perspiration breaks out during a quiet sleep, and continues several hours; when the stools become more natural in their appearance and odour—an increased flow of urine takes place, or a large discharge of watery fluid from the nose. The augury is unfavourable where the pulse, from being frequent, becomes suddenly slow (indicative of the second stage); or where, from being slow, it becomes extremely rapid, small and feeble, partial clammy sweats break out, particularly on the back part of the head and neck, and accompanied by hurried breathing, which is the most certain symptom of the near approach of death.

Treatment of the first form. Where there is reason to suspect the existence or approach of hydrocephalus, the speedy adoption of remedies is of the utmost importance, or the chance of saving the patient may be lost by delay. These are cases which peculiarly demand decision on the part of the medical practitioner, and in some instances he must act on very slight indications,—as when there are threatenings of the disease in a very scrofulous child, or in the child of a family where other children have died of the disease.

It is true, that in many of those cases labouring under precursory symptoms, which have terminated favourably under treatment, it is impossible to say how many might have run on to confirmed acute hydrocephalus; still it is better to act on the worst supposition, and not wait until the symptoms demonstrate the disease as fully established, and at the same time the patient placed in an almost irremediable state.

It is of importance to investigate all the circumstances of the case, and to endeavour to discover the exciting cause of

the disease, as to whether it may have resulted from any accidental cause—as a fall, or blow on the head; whether eruptions have been repelled, habitual discharges stopped, or previous disease existed, as thereon may depend the right indication and suitable selection of remedies. The age, constitution, and temperament of the patient should also be duly considered, as they have very great influence on the disease.

The indications are—First, to remove from the system every irritation which may have given rise to the diseased action of the brain, or that may have assisted by morbid sympathy to prolong it. Secondly—to diminish the increased activity of the circulation of the brain during the inflammatory stage. Thirdly—to excite serous secretions from the bowels and promote absorption. Fourthly—to support the strength, and recruit it more particularly under any critical discharge. Fifthly—to alleviate pain, vomiting, and convulsions, where we fail in removing the cause; and finally, where death seems inevitable, to render its approach as easy as possible. For fulfilling the three first and most important of these indications, the antiphlogistic class of remedies are the chief and most appropriate,—as blood-letting, purgatives, mercury, cold applications, and blisters. In endeavouring to explain the best mode of employing these it may be observed that in this disease the state of the organ affected, often appears at variance with the state of the system; in which an increased action of the vessels of a part, coexists with general debility; and where, in order to avoid impending destruction, measures must be employed, contraindicated by the existing diathesis. In the precursory stage, or in the first form of the disease, should there be any head ache, or should the threatening symptoms have occurred soon after any injury of the head, it will be well to premise the treatment by blood-letting, by leeching, or cupping from the nape of the neck or base of the occiput, and then to direct our chief attention to the state of the alimentary canal, which is generally deranged in its actions and secretions, and to clear it out by means of an active purgative. The purgatives most applicable are those which increase the secretions, for the mere removal of fæces from the intestines will do little

to benefit the patient. An efficient dose of the *hydrargyri chloridum* should be given, followed by some *pulv. jalapæ comp.*, or *pulv. scammoniae comp.*, or *mist. sennæ comp.*, till full purging is produced, and the vitiated secretions removed. According to the best authorities, the judicious exhibition of purgatives is little, if at all, inferior to blood-letting, in arresting almost every manageable form of cerebral disease. Dr. Abercrombie states, that although blood-letting is never to be neglected in the earlier stages, more recoveries from head affections, of the most alarming aspect, take place under very strong purging, than under any other mode of treatment.

To accelerate the action of the purgative, an enema may be administered of soap and water, or of *infusion sennæ*, with *magnesia sulphas*. Where, from the existence of nausea and vomiting, or the perverted action of the intestines, or from over excitement of some of the viscera, the purgatives do not act, or where the child shrinks on pressure being applied to the abdomen, and which is frequently the case over the right hypochondrium, it will be advisable to take away blood, either from the part, or from the arm, (or if there be pain in the head, from the temples). If a gland be congested, or excited beyond a certain point, it is no longer able to perform its secreting function; a stimulus now applied, instead of restoring secretion, often increases the vascular excitement upon which its interruption depends. The viscera of the abdomen, more particularly the liver, are often in a state of high irritation in hydrocephalus; and this irritation ought to be allayed before the stimulus which increases their secretion can be employed with advantage, or even with safety: the practice should be to reduce this increased action by blood letting. After bleeding, the bowels are much influenced by purgatives; as $\mathfrak{z}\text{i}$. or $\mathfrak{z}\text{ij}$. of *magnesia*, saturated with lemon juice, given every second or third hour, will be often more effective than the most powerful purgatives; or the more drastic ones may now be given with safety—as a drop or two of croton oil rubbed on the tongue.

Were it more customary to let blood in those febrile diseases of children commencing with sickness and vomiting, and more especially where there is also fulness of the hypochondria,

one half the cathartic medicines commonly given would be sufficient to restore the intestinal secretions; the crisis would take place at an earlier date, and fewer cases of hydrocephalus, subsequent to infantile remittent fever would occur.

By the efficient action of a purgative, we prevent the irritation, which an accumulation of indigestible matter in the bowels is apt to produce, and also cause a derivation from the general mass of blood, and especially from the vessels of the head, as indicated by the paleness of the face which ensues.

The action of the purgative should be followed by small doses of the *hydrargyri chloridum*, gr. ss. to gr. ii., according to the age of the child, given every second hour. The object is, to change the action of the secerning vessels, and more especially to encourage and improve the biliary secretion. In so doing, we must avoid irritating the mucous membrane of the bowels, by repeated large doses of calomel, or any of the more drastic purgatives. The exhibition of mercury is only contraindicated, where violent colic or painful diarrhœa ensues; and these effects may for the most part be prevented, by combining it with chalk or *pulvis cretæ comp. cum opio*, or substituting the *hydrargyrum cum cretâ* for the calomel. The mercury should be continued till green slimy stools are produced, or abdominal ptyalism follow. When its beneficial effects are produced, (and much here must depend on the judgment of the practitioner,) the frequency of its exhibition should be diminished as the symptoms recede, and its action be allowed gradually to subside, and not hurried out of the system by purgatives. Should constipation exist during its exhibition, a purgative should be given every twenty-four or thirty-six hours.

There are some cases in which blood-letting, otherwise indicated to moderate the increased action of the cerebral vessels, and to prepare the abdominal viscera for mercury, is contraindicated by the general diathesis of the patient, and by many of the symptoms of the disease. In these, the milder antimonials, in combination with mercury, will often be found efficacious. Care should be taken not to cause vomiting, as that, from the state of the brain in hydrocephalus, would be ex-

tremely prejudicial; from gr. i. to gr. ij. of *pulvis Jacobi*, or 1-16 gr. of *antimon. potass. tart.* may be given with each dose of calomel. With these, mild diaphoretics and diuretics may be given,—as *liquor ammoniæ acetatis*, nitrate of potash, diluent drinks; the action which they excite on the skin weakens the excitement within the head, perhaps in the same degree as calomel does by its action on the abdominal viscera. The hair should be cut close, and cold applications—as ice and water; or evaporating lotions applied to the head, by means of linen rag, four times doubled, moistened in the fluid and laid on the forehead, and changed when cool; or cold water may be dropped on the head at intervals, a basin being held below, which is a more efficacious remedy; or the head may be placed on a large bladder, half filled with iced water, the air being pressed out, and the bladder tied at the mouth; or a Mackintosh pillow may, be used in the same way, as recommended by Professor Davis; the water should be changed when warm; the soporose unconscious state, which no other means affect, will often vanish under the influence of this remedy, for a space of time.

Blisters may now be applied, with the precautions before stated, to the nape of the neck, and inside of the calves of the legs, or upper arms.

Mustard cataplasms may be used in the same way, or applied to the feet, and should be kept on until the patient feels their action.

Warm pediluvia, with or without salt and mustard, may be used twice a day; and at night, when the child is lying in bed, they have a most tranquillizing effect. Baths for the whole body are not advisable in acute hydrocephalus, except where it supervenes on repelled eruptions, or perhaps in the stage of palsy, as they increase the rush of blood to the head, and aggravate the disease.

The *vapour bath* has much to recommend it—the child, without being disturbed, being placed under a basket cover.

A case is mentioned, where all other remedies having failed, the bath was used as above: during its application the sickness ceased, copious motions succeeded, the pulse became tranquil-

lized, and fell from 160 to 130, a gentle perspiration broke out over the whole body, and the patient recovered.*

Iodine and its compounds are spoken favourably of by several practitioners, in the latter stages, in this form—

R. — Hydrarg. chlor. gr. viii., iodinii gr. i., sacch. albi gr. lxxx. m Ft. pulv. in part. xvi. æquales dividendus, sumat. i., 2^{da}, 3^{ta}, vel 4^{ta} quâque horâ. Or the hydriodate of potash, in half grain doses, may be given every hour or two. This remedy seems more appropriate in the decidedly scrofulous forms.

Mercurial frictions are to be employed where effusion and palsy are apprehended. The nape of the neck, arms, and thighs, are the most suitable places for their application, and in order to be beneficial, 3j. at least, of the mercurial ointment should be rubbed in in twenty-four hours.

The patient should be placed in a roomy chamber, which should be kept of a moderate temperature, and screened from strong light; the bed should be made to resemble a slightly inclined plane; the pillow firm, so as not to heat the head, which should be moderately elevated, and uncovered; extreme quietude should be observed, and the patient not be irritated even to give medicine; and it is advisable that those who take care of the child in a state of health should have charge of it now.

The *Diet* should consist of toast and water, barley water, rennet whey, and other cooling drinks. If the patient be an infant at the breast, it should not be applied so frequently as heretofore; or, at all events, not be allowed to suck so long at a time; the nurse's diet should be spare, and she should forego stimulating drinks of all kinds.

Treatment of the *acute or inflammatory* form.—Where the disease is at first ushered in by violent excitement, or the previous state has been unattended to, and inflammatory symptoms declare themselves, active depletion by blood-letting is of the greatest importance. This should be done quickly,

* Jekell's bath is here of useful application. A more portable, and equally efficient apparatus, has of late years been introduced—Duval's patent apparatus, in which a very ingenious and scientific spirit lamp unites cleanliness, celerity, and efficiency. It is sold by Messrs. Weiss and Son, Strand, 62.

either by general or local means, or by both. A sufficient quantity of blood should be drawn at once to make an impression on the disease; for repeated small bleedings never so surely, nor so speedily, fulfil the wished-for object.

Inflammatory affections of the brain are to be cured by resolution alone; no provision is made for their relief by increased secretion compatible with the safety of the patient; we must therefore subdue the force of the circulation without loss of time. Blood may be taken from a vein of the arm or foot, or jugular vein; or by cupping or leeches, from the nape of the neck, base of the occiput, or the temples. From a robust child, of from six to eighteen months old, from ʒii. to ʒiv. of blood may be taken; from that to four years of age, ʒv. or ʒvj.

If the symptoms require a repetition of the bleeding, it should be done at a short interval; it is especially necessary, if, after the first bleeding, the pulse becomes more regular, and then again returns to the former irregularity, with an aggravation of the symptoms. Some caution may be necessary as to the quantity of blood to be drawn from feeble children, of cachectic habits, as also during the prevalence of any epidemic; or if the attack be excited sympathetically, or from metastasis, or in older children from long study: where general bleeding is not advisable, local bleeding will mostly be requisite. As long as the pulse is irregular, and not very weak, or it does not become a febrile regular pulse, and there is no diminution of the vehement headache, blood may be allowed to flow. Purgatives, assisted by enemas, should be immediately given, and as the bowels in this stage of the disease are often obstinately costive, drastic purgatives and more stimulating enemas may be required. Cold applications to the head, sinapisms, and blisters, should be applied as beforementioned, so that their action may begin as speedily as possible after the necessary depletion.

Blisters being among the strongest external stimulants, should not be applied to the scalp, as they must obviously increase the determination to a part where every irritation ought to be avoided, and prevent the use of cold applications, which are of less doubtful efficacy. Mercury should now be given, or used externally, until its influence is fully established, or the disease checked.

Digitalis is in this form, or after scarlatina, a useful addition to the other remedies; especially where, with diminished power, there prevails an increased excitability of the arterial circulation, their combined effect produces a powerful revulsion by their action on the alimentary canal and urinary organs, causing derivation from the head, and increasing the evacuations by stool and urine.

It may be given in $\frac{1}{4}$ proportion to the calomel; or in the form of tincture or infusion, with Arabic emulsion, but not so as to excite vomiting; and its effects should be carefully watched, since it sometimes causes symptoms resembling the disease, as those which take place on the approach of the stage of torpor. The distinction is, that languor from *digitalis* is attended with vertigo, sometimes momentary blindness, while that from hydrocephalus has more of coma in its character. In the irremediable cases it is said to render the latter stages milder, and prepare a gentler death. In the after treatment, during convalescence, it is useful where there is a paucity of urine, and the morbid irritability of the blood-vessels do not yield to tonics. Opium and narcotics, after due depletion, are powerful instruments in facilitating the operation of other remedies.

The peculiar effect of opium in children is well known (see section v., chapter on the effects of opium), but it does not follow, that the same effects should take place under the influence of disease. Opiates greatly tend to allay the morbid irritability, and the excessive vascular action which is the consequence of it, and procure sleep. The difficulties which attend its employment in the diseases of the brain, arise from its effect in masking the disease, and therefore it requires to be given with discretion. It is impossible to lay down rules for its exhibition in every case—the practitioner must be guided by marking its effects: the state of the eye may prove a good test for its exhibition, a contracted pupil contraindicating its employment. In combination with mercury it tends to relax spasm, relieve sickness, or great irritability of the bowels, in the form of *pulv. ipecac. comp.*, with calomel or *hydrarg. c. cretâ.*

When, after the inflammatory symptoms have subsided under previous antiphlogistic treatment, watchfulness, sleeplessness, and great susceptibility to the slightest impression remain, or there is a constant state of uneasiness (see case in chap. on opiates,) which are unfavourable to the progressive improvement, or restoration of either the vascular excitement or healthy state of the brain, opiates, in the form of *pulv. ipec. comp.*, or *tinc. opii*, judiciously given, will ensure the permanency of the good already effected. The beneficial effects of opiates are, if possible, still more marked, when given as a restorative, in combination with carbonate of ammonia, in those cases, where the child lies in a less than half-conscious state, with cold extremities, taking at intervals just nourishment enough to support life, but which would be extinguished from its restlessness were it not tranquillized, and at the same time upheld. The *lig. opii sedativus*, or the *tinct. opii* are to be preferred. For the simple purpose of procuring sleep the preparations of morphia are recommended. In some cases this preparation, sprinkled on a blistered surface, answers admirably. In order to procure an anodyne effect in diseases of the brain, attended with activity of the circulation in children, a moderate dose of opium will be sufficient to commence with; in larger doses at first it would probably interfere with the action of the bowels, or be otherwise prejudicial. It may, however, by degrees, be increased to some extent.

Hyoscyamus may be employed with the same intentions as opium, but equal reliance cannot be placed on it, except in combination with purgatives, where it ensures their effects by allaying the irritation, which otherwise might counteract their operation.

In the third or consecutive form, when it supervenes during, or soon after any of the exanthemata, particularly scarlatina or whooping cough, it is more or less inflammatory, and requires very decided treatment. Blood-letting should be carried as far as an attentive observation of its effects indicate, and an active remedial treatment should be employed without delay; and here the more drastic purgative and terebinthinate enemata will be appropriate.

In cases consequent upon exhaustion, the torpor or coma being intense, blistering the scalp, and stimulating enemata, with the treatment appropriate to the latter stages, should be adopted.

The treatment should be persevered in, until we are quite certain of its inutility. As long as the pulse continues steady, and the breathing natural, the most alarming symptoms, as strabismus, blindness, or even convulsions, should not prevent the employment of active remedies, for after such symptoms, recovery sometimes takes place. If in despite of all exertions the last stage of palsy comes on, little but palliative treatment can be adopted, and this perhaps more to avoid being reproached with inactivity, than for any absolute good that can be expected. Parents become reconciled to their child's death by its screams and struggle, its imploring and vacant looks; but still in all the sickness of heart which they suffer, a hope for its recovery lingers behind; stimulants and palliatives tend at least to allay the sufferings, and render the hopeless state of patients more bearable, and the friends feel satisfied with the assurance that all available means have been tried. Should the disease fortunately be arrested in its progress, and effusion in the brain be prevented, the foregoing treatment should be relaxed in with caution, and the blisters kept open for some time. After arresting the most imminent danger, the patient will be sometimes left in a state of signal exhaustion; stimulants and tonic remedies should be carefully exhibited; for this the preparations of bark and bitter vegetable infusions, valerian, serpentaria, camphor, ammonia, and arnica, and preparations of iron are suitable.

Where there is spasmodic irritability, the bark in combination with valerian; where torpor or diminished excitability, bark combined with *sp. æther nit.*, camphor, ammonia, or arnica. Where there is great exhaustion and uneasiness, with or without torpor, ammonia with *tinct. opii*, as gr. ii of the former, and mss of the latter, to a child of from one to two years old, may be given every three hours, or the *tinct. opii* may be omitted, and *tinct. myrrhæ* miss added. The bark, when the muscular strength is enfeebled, will be found more efficacious than any

other tonic. The decoction or infusion may be given with milk and sugar, or coffee, to which some isinglass jelly may be added. Spirituous stimulants, and spices are not advisable except in great degrees of exhaustion, for in this disease (as well as in croup) after the inflammation and danger of effusion have been removed, relapses are easily produced. In extreme morbid irritability of the arterial system, or where the secretion of urine is deficient, digitalis, combined with tonics, will be beneficial.

It will now be of importance to give suitable nourishment, as broths, which may be thickened with vegetable or isinglass jellies, animal jellies, asses milk, breast milk, and in some cases, a small portion of wine. As to food, with some limitations, the taste of patients may be consulted, and there are periods when they are disposed to take nourishment, and these periods should be taken advantage of, since the disease is sometimes fatal from mere debility.

Tepid baths, during convalescence, are occasionally useful where there is a dry skin, with a deficient cutaneous secretion, or where there is a degree of torpor with diminished excitability.

The temperature of the apartment should be carefully regulated, and the patient guarded from mental irritation, indigestion, cold, and agitation of mind, and subsequently exercise in the open air, and change of air into the country, as soon as it is admissible, is to be recommended.

After recovery, it should be ever present in the mind, that where a great source of irritation has been removed, a very liberal supply of nourishment is less necessary than has been supposed. The principle is, to adapt the food to the enfeebled powers of digestion, and the exercise to the reduced muscular strength of the patient. In the first, excess must be avoided, and in the latter, fatigue must be guarded against.

Prevention, or prophylactic treatment.—The alliance between scrofula and hydrocephalus must always be borne in mind. In families where there is a tendency to this disease, it is more easily detected by disorder of the stomach and bowels, than by headache; every deviation, therefore, in the natural appearance

of the evacuations should be corrected. Where many children have been lost, it is advisable to choose a wet nurse of a temperament as much unlike the mother's as possible. During the hazardous period of dentition, the state of the teeth and gums should be sedulously attended to. Susceptibility to disease should be diminished by light and nutritious diet, which should consist of a fair portion of animal food, with well dressed vegetables, good air, moderate but regular exercise and bathing; in delicate children, bathing or sponging with tepid salt and water daily (see article bathing.) Costiveness is never to be neglected; constitutional slowness of the bowels may perhaps exist without danger; elder children should be warned of the pernicious effects of retaining their urine; the benefit of occasional bleeding at the nose should not be suppressed; every disorder of the natural functions should be corrected, and morbid determination relieved; in threatening circumstances, new actions in the system should be induced by means of issues, setons, or repeated blisters; some have advised a caustic issue to be applied to the nape of the neck, and others have thought that the progress of the disease has been stopped after threatening symptoms had taken place, by covering the whole crown of the head with a blister, and keeping it open for a year or more.* I am induced to add, as preferable in some instances to the above severe application, that of covering the whole scalp with an oil silk cap for a length of time; first shaving the head very close, and repeating the shaving as often as the oil silk should be raised from the head.

Ten children of the same parents died of water in the brain; in the eleventh, an issue was made; this child grew up, and was the mother of fifteen children. Seven of these, in whom

* Or what is called a perpetual issue at Edinburgh, which is, by applying a plaster, consisting of equal parts of emplastrum cantharid. and ceræ. This, it is said, does not erase the cuticle, or erode the parts under it, but leaves them entire, and suffers the hair to grow up. As it, in ten or twelve days, pushes off the plaster, it is necessary to leave it off; and as soon as the skin can bear the razor, to take off the hair, and apply a fresh plaster. This gives less pain, is free from the inconvenience usually attending the blistering plaster, where the cantharides are absorbed, and get into the blood, whereby a strangury is sometimes brought on.

issues were *not* made, died with all the symptoms of hydrocephalus, the other eight had all issues made and lived.

A clergyman observed, that copious perspiration was endeavoured to be induced in three children, whom he lost with hydrocephalus; directly the fourth shewed the least symptom of the disease, he gave it a large dose of James's powder every night, and on the alternate nights as much rhubarb, with the James's powder, as induced purging; by this means many children appeared to be saved.

Too early mental cultivation has a most pernicious effect; many children of this diathesis have a precocious intellect, and parents are proud and flattered by the early acquirements of their children; it is our duty to apprize them of the risks they are thus running by favouring this disposition. It is not the mere exercise of the brain that is hurtful, for activity of the brain is natural to childhood; it is the continuous exercise on particular subjects that is prejudicial, when it is carried on at the expense of the bodily powers, on subjects not suitable to the age, and at a time when nature is endeavouring to perfect all the organs of the body. In such children, whatever may be their malady, their brain requires attention, and whenever they complain of symptoms referable to it, the utmost tranquillity should be observed, the bowels should be attended to, and some sedative given and their minds carefully withdrawn from their studies.

Some scrofulous children have a torpid inactive constitution of brain, and a consequent sluggishness and hebetude of mind, that requires to be roused and stimulated into action; this state of brain is as prejudicial as the former. A certain degree of activity of mind is absolutely requisite to the due performance of the nutritive and all the other functions of the body; these children require companions, active games, plenty of fresh air, and bodily exercise, and some mental occupation to ensure the requisite degree of nervous energy.

On the ill effects of too early cultivation, the following quotation from Dr. Bennett is very illustrative:—

“It is, indeed, a beauteous sight, one of the most lovely this earth affords, to view the growth of the immortal mind, the

expansion of its powers under the influence of right moral and intellectual culture, and to watch their exercise in the still feeble, and delicate body of a child. But lamentable and fatal is the mistake, to attempt the cultivation of the intellect, ere yet the soil which is to support it has been prepared. We may plant the oak in a china vase, fit only for the reception of delicate flowers, and for a while it will flourish; but as the roots of the strong tree expand, the fair vase is shattered."—Goethe.

[Dr. Merriman says,—“In a few cases of cerebral oppression and oppilation, bearing so much resemblance to the early stages of hydrocephalus, as scarcely allowed me to doubt the identity of the affection, after going through the routine of leeches, calomel, purgings, cold lotions, &c., I have in despair of seeing anything relieve the patients, given at times the following remedies, and occasionally with success.”]

First.—In about twelve cases I have given a grain of calomel, and a half grain of digitalis, every four or six hours. The most marked case in which this did good, was in a child, a relation of the late Mr. Chevalier, with whom I was in attendance. The first symptom of the disease was an attack of convulsions. Ptyalism, and a great flow of urine were excited, and the child recovered. But it was some weeks before she regained the use of her tongue, and she dragged one leg after her for some months; when the symptoms began to yield, a blister to the head appeared to be of great service. This little girl is now in all respects well, and her mind as acute as most at her age. In cases of oppressed brain, bearing less decided resemblance to hydrocephalus, I have frequently seen the combination of calomel and digitalis beneficial.

Secondly.—In several cases, I have given from a thirtieth to a sixteenth part of a grain of oxymuriate of mercury, every four or six hours. In two cases it stopped the progress of the disease, and the patients recovered. In these it produced copious olive-green coloured stools, and increased the flow of urine. One of these patients had strabismus, and the pulse was irregular, so as sometimes to intermit. Her attack took place during the process of dentition, when four molares were coming forward. The other case, that of a boy, showed from

the first more distinct symptoms of hydrocephalus, and the parents, as I was informed, had already lost two children from that disease.

Thirdly.—In about twelve cases I have given the tinctura lyttæ, in doses of from five to ten minims every four hours; and I think that in three cases the disease was decidedly arrested. In one case there was strabismus, and the child had been several times convulsed. The tincture was continued till it produced most severe strangury, from which moment the cerebral symptoms began to give way, and the child recovered. Mr. Hammerton attended this patient with me. The boy, now seven or eight years old, is still unable to use, freely, one of his hands. He is obliged, in order to grasp any thing, to have the fore arm supported on a table, or other flat surface. In the other two cases, severe strangury was the symptom which seemed to occasion relief to the affection of the head.—S.M.]

Chronic hydrocephalus.—*Hydrocephalus externus.*—Children are sometimes born with their heads enlarged from hydrocephalus externus, and are then commonly born dead. At other times, it makes its appearance soon after birth. I have known three children, under this disease, arrive at full ten years of age, who were then unable to walk, or even to sit upright in a chair.

In the 1st vol. of Medical Communications, mention is made of two people then living, one of whom had attained the age of twenty-nine, and the other of forty-five years; the former did not appear to have any enlargement of the head for three weeks after birth.

When no symptoms of hydrocephalus appear at birth, although the enlargement should be manifest very soon afterwards, and increase rapidly, the water is sometimes, at least, contained within the ventricles of the brain: and from the circumstance of no children living long with an internal hydrocephalus, but those whose heads enlarge within a few months after birth, I should suspect the disorder has, in such instances, taken place in the womb.*

* In the Medical Journal, vol. ii. p. 1, an instance is related by Mr. E. Ford, of a

In a case where the head began to be sensibly enlarged at four months old, and the child lived to the fifth year, unable to walk or even to support its head, upon a careful examination of the parts after death, the water, to the quantity of three pints, was contained within the ventricles, which were so stretched as to compress the brain in such a manner, that it appeared only like a smooth thick membrane within the duramater; and of all the solid contents of the skull, scarce anything but the cerebellum remained. Tulpius, Hildanus, Vesalius, and Morgagni, have noticed the like in children from two to five years of age; and it must, therefore, be still more likely to happen where the hydrocephalus internus has taken place in the fœtus in utero, where the brain is much more tender. Dr. Whytt, of Dublin, likewise mentions no less than three instances of the same kind, in which the brain was so compressed by the great quantity of water within the ventricles, as to put on the appearance of only a small gland.

The external hydrocephalus, at whatever period it may commence, has always been esteemed a fatal, as well as most distressing complaint; but I have been informed, that where the disorder has not been very manifest at the birth, blisters on the head have sensibly diminished the bulk. These should be applied successively to different parts, especially along the top of the head, in the course of the longitudinal sinus, so as to keep up a constant discharge; which may possibly, in some instances, effect a perfect cure: at least, the advantages already observed are sufficient to justify the attempt, in a disorder hitherto esteemed incurable. In a publication by Mr. Hill, we have the account of an effectual cure, under the employment of oxygen gas, after the head had acquired an enormous size.*

[The internal remedies from which most benefit appears to

child seized with symptoms of water in the head, at the age of nine years, who lived eleven months afterwards, during the last eight of which he was unable to stand on his feet. After death, the sutures were found to be separated to a considerable degree, the ventricles containing eleven ounces of water; but there was no water exterior to the brain.

* Practical observations on the use of oxygen, or vital-air, in the cure of diseases, &c.

have arisen, are the judicious administration of diuretics and purgatives, conjointly with the abstraction of small quantities of blood from the head, by means of leeches, where turgescence of the vessels or great heat of the surface exists, and counter-irritants, by the application of blisters and setons to the head and neck, or spine, as it is not unfrequently complicated with spinal arachnitis. During the treatment, the strength is to be supported by suitable nourishment, adapted to the age of the child, and in some cases by the exhibition of light tonics and stimulants. In some cases, mercurial inunction is of signal service, and one very aggravated and apparently hopeless case may be briefly stated. After moderate leeching and purgation, mercurial friction was strenuously employed in the proportion of ʒij. ung. hydrarg. fort. daily for three weeks. Diuretics, principally of squill and digitalis, combined with calomel, were given, as pulv. scillæ, pulv. digitalis, hydrarg. chloridi āā gr. i. ft. pulv. to be taken every night and morning, with an occasional purgative. The child first subsisted on breast milk; latterly white wine whey and arrow-root was allowed, and ammonia, in combination with tinctura opii was given. The gradual improvement in the child from the third week to the end of the fourth, was most encouraging; he was watched carefully during dentition, and the above powder was given occasionally, which latterly acted most copiously. He is now a fine young man, of 21 years of age, and an inguinal hernia, which he also had, has disappeared.

Dr. Watson speaks in favourable terms of Dr. Gower's plan in two cases. Ten grains of crude mercury, one scruple of manna, and five grains of fresh squill, are to be rubbed down for one dose, to be given every eight hours. The first patient, a lad, who had been ill two or three years, took the above dose three times a day for nearly three weeks, without ptyalism being produced. Its effects were great prostration of strength and loss of flesh, with gradual relief of all the sufferings. It operated profusely by the kidneys. The medicine was continued twice a day, and at length once a day for another fortnight, when all the symptoms of the disease had disappeared. The boy was greatly emaciated. He was then ordered an ounce and a half

of Griffiths's mixture thrice daily; and soon regained his health and strength, and got quite well.

The second case, a youth of twelve years old, after resisting all other remedies, was treated in the same way. The cure also was permanent.

There are *two local remedies* which have been successful in suitable cases—*compression* and removal of the fluid by *puncture*.

Compression appears to have been suggested on the supposition, that the increase of fluid within the head might, in some measure, depend on the want of firmness and proportionate resistance in the outer containing parts, in the feeble and half-ossified skull. A certain amount of support and pressure is requisite for the due performance of the functions of the brain; all increase of pressure beyond this is hurtful. The facility with which the skull yields by means of the membranous interspaces between the cranial bones in the early period of life proves, on many occasions, the safety of these patients. If the skull did not expand as the fluid was effused within, great derangement would ensue: much attention, therefore, is requisite in the application of this remedy. While the head is evidently enlarging, compression would probably be pernicious; when the disease is stationary, and the parietes of the skull are loose and fluctuating, and the child is pale and languid, benefit may be expected from moderate and well regulated support. It has been done with medicated plaster; but strips of simple adhesive plaster are equally beneficial; these should be carefully applied, from the base of the occiput to the eyebrows, and from one ear to the other, covering also the intermediate spaces, so that the whole shall be equally and firmly compressed. In Mr. Barnard's cases the children were pale, bloated, and feeble, with flabby muscles, the bones of the head were moveable and floating, and the functions of the brain were more or less impaired. When the compression was attended with an increased degree of heat, linen, moistened with cold water, was applied over the plaster. As medicine, castor oil only, to regulate the bowels, was given. The effects in these cases were a gradual diminution in the size of the head, mitigation and ultimate disappearance of all

the head symptoms, such as strabismus, rolling of the eyes, starting of the muscles, and convulsions; and at the same time an increased tone of the muscular system, with an improved appearance of the skin, and the secretions from the bowels. Hence it is evident, that in certain conditions of chronic hydrocephalus, part of the danger arises from want of due support and confinement of the brain; and they prove that compression alone is equal to the cure.

Removal of the fluid by puncture.—When the head is tense from the accumulation of fluid within, and inordinate pressure is taking place from the skull being no longer capable of expansion, other means having been ineffectually tried, this remedy has been resorted to with success; that the operation is hazardous there can be no doubt; but the train of untoward symptoms—as convulsions, idiocy, and ultimately death, which must otherwise ensue, renders the chance of obtaining relief worth the trial; and the instances of success on record are sufficient to warrant it.* The rules for the performance of the operation may be briefly stated. The trocar should be small, and lancet shaped, in preference to the usual form; it should be introduced perpendicular to the surface, at the edge of, and below the anterior fontanelle, through the coronal suture, so as to be as much as possible out of the way of the longitudinal sinus, and of the great veins that may empty themselves into it. The fluid should be allowed to issue very slowly, and a part only should be evacuated at once; the instant the pulse becomes weak, or the dilated pupil contracts, or the expression of the child's countenance manifestly alters, the canula should be withdrawn and the wound carefully closed. Gentle pressure should be made round the head during the discharge, and afterwards be carefully continued, by strips of adhesive plaster, to compensate in some measure for the pressure of the fluid that has been removed. Should the infant become faint and pale it must be placed in the horizontal posture, and a few drops of salvolatile, or brandy, mixed with water, given. Should inflammatory irritation ensue, it must be treated by

* See Dr. Copland's Medical Dictionary, and a paper by Mr. Lizars, in the Edinburgh Medical and Surgical Journal; also by Dr. Vose, in Med. Chir. Trans. vol. ix.

antiphlogistic means, and the application of evaporating lotions. In the Medical Gazette of March, 1838, Dr. Conquest states, that he had then tapped the head of nineteen children for this complaint, of whom ten survived. The greatest quantity of fluid withdrawn by him, at any one time, was twenty ounces and a half; the greatest number of operations on any one child was five, performed at intervals of from two to six weeks; the largest total quantity of water removed by five successive tappings was from fifty-seven to fifty-eight ounces.

Medicated baths of alkaline and other solutions have been extolled, particularly one of tartar emetic, in the proportion of one ounce to four gallons of water, gradually increased to an ounce in each gallon; it appears, when thus employed to cause a copious flow of urine, the patient growing thin, and the size of the head at the same time diminishing.—H. D.]

Hydrocephaloid disease.—Dr. Marshall Hall says—"I first gave a cursory sketch of this morbid affection in a little volume of 'Medical Essays,' published in 1825." It has since been briefly noticed by Dr. Abercrombie, in his valuable "Researches on Diseases of the Brain and Spinal Chord," published in 1828. Lastly, Dr. Good treated of this affection in his excellent "Account of some Diseases peculiar to Women," published in the following year.

The diseases of children best understood, are those which arise from irritation, and principally irritation in the stomach and bowels, and the irritation of teething, and inflammation. But there is another disorder in infancy, less frequent perhaps in its operation, but not less important in its consequences, and far less understood by medical men, which has its source in exhaustion.

Hydrocephaloid disease may be divided into two stages, the first that of irritability, the second that of torpor; in the former there appears to be a feeble attempt at re-action, in the latter the nervous powers appear to be more prostrate. These two stages resemble, in many of their symptoms, the first and second stages of hydrocephalus respectively.

This morbid affection has, as I have stated, usually been

first induced by some change in the diet, by which the stomach has been loaded or disordered, and the bowels perhaps affected with diarrhœa; and this latter state has frequently been exasperated by the untimely administration of an aperient medicine. The infant becomes irritable, restless, and feverish; the face flushed, the surface hot, and the pulse frequent; there is an undue sensitiveness of the nerves of feeling, and the little patient starts on being touched, or from any sudden noise; there are sighing and moaning during the sleep, and screaming; the bowels are flatulent and loose, and the evacuations are mucous and disordered.

If, through an erroneous notion as to the nature of this affection, nourishment and cordials be not given; or if the diarrhœa continue, either spontaneously, or from the administration of medicine, the exhaustion which ensues is apt to lead to a very different train of symptoms. The countenance becomes pale, and the cheeks cool or cold; the eyelids are half closed, and the eyes are unfixed, and unattracted by any object placed before them, the pupils unmoved on the approach of light; the breathing, from being quick, becomes irregular and affected by sighs; the voice becomes husky, and there is sometimes a husky teasing cough; a slight erythematous or uphonous affection of the palate and fauces; and, eventually, if the strength of the little patient continue to decline, there is crepitus or rattling in the breathing; the evacuations are usually green, and the feet are apt to be cold. Squinting is sometimes an accompanying symptom of this disease, as is also blindness.

A similar train of circumstances occur in other cases, in which the strength of the little patient has been subdued, and the vascular system exhausted by the abstraction of blood. In both cases, leeches are sometimes again applied to subdue this new form of disease, under the erroneous notion of a primary cerebral affection. This measure infallibly plunges the little patient into imminent, if not irretrievable danger.

Sometimes the sinking state goes on in spite of every appropriate remedy.

Stimuli, if efficacious, reduce the frequency of the pulse, and restore the wonted warmth, colour, expression, and smiles, to the countenance.

The condition of the cheeks, in regard to colour and warmth, may be considered as the pulse of very young infants, indicating the degree of remaining power, or of exhaustion. In the present case especially, there is no symptom so important, so distinctive. It is from the condition of the cheeks, in conjunction with a due consideration of the history, that the diagnosis of this morbid state, and the indication of the appropriate remedies, are chiefly to be deduced. The general surface, and especially the hands and feet, also afford important sources of information as to the condition of the nervous or vital powers. Next to these, the degree of frequency of the pulse, and the character of the breathing, are points of the greatest importance;—during the stage of irritability the breathing is quick; during that of torpor, it is slower, irregular, suspirious, and finally crepitous; the pulse changes in its beat, from being full becoming smaller, but retaining, perhaps, its former frequency.

We should be especially upon our guard not to mistake the stupor or coma, into which the state of irritability is apt to subside, for the natural sleep, and for an indication of returning health. The pallor and coldness of the cheeks, the half-closed eye-lid, and the irregular breathing, will sufficiently distinguish the two cases. It is equally important to distinguish this state from a hydrocephaloid affection arising from derangement of the alimentary canal, and from the coma of hydrocephalus itself. This is to be done chiefly by observing the condition of the countenance, and by tracing the history and causes of the affection.

In the very last or extreme stage of this affection, there was, in one case, with the coldness of the cheeks and comatose state of the brain, a visible mucous film seen over the half-closed, unfixed eyes,—very contracted pupils,—alternate suspension and sighing in the breathing. The infant did not appear so near dissolution as it really proved to be.

“This state of things is often mistaken for inflammation of

the brain or hydrocephalus. And it may be difficult to state the grounds for a just diagnosis between the two affections. It will, however, be of great assistance to be fully aware of the nature and character of exhaustion, and to conjoin with this knowledge a due retrospect of the history of the case, and a due consideration of the effects of the various remedies which may have been employed.

“The state of exhaustion in infants is little marked by the symptoms of re-action. At first there are restlessness, and irritability of temper, whilst the countenance is pale and expressive of great anxiety, and there is great frequency of the pulse; afterwards the temper and restlessness appear subdued, there are some dozing and other false and deceptive appearances of amendment, but the pulse is still more frequent, the face pale and sunk, and the cheeks and extremities are cold: the voice is apt to be husky, hacking, and attended with a husky, hacking, and distressing cough.

“When a child has been rather long ill, when active remedies have been employed, when the form of the disease has perhaps changed in some degree, and paleness of the cheeks is attended with irritability and restlessness, we should carefully consider whether the symptoms may not be those of exhaustion. I am persuaded that by relinquishing all lowering remedies, and adopting a cordial and soothing plan of treatment, I have seen some children recover who would soon have sunk under the continuance of remedies calculated to subdue a supposed state of inflammation. In these cases the idea that the original disease, and the remedies, had worn out the little patient, and led to a state of exhaustion, had apparently never occurred to the practitioner. It is impossible to do justice to this subject in a short section of a short essay; but I am satisfied that the hints here offered will, if carefully considered and cautiously acted upon, be of great assistance to the young physician in his treatment of some of the diseases of infants.*

Dr. Abercrombie observes, “In the last stage of diseases of exhaustion, patients frequently fall into a state resembling

* Medical Essays, pp. 72—76. 1825.

coma, a considerable time before death, and while the pulse can still be felt distinctly; I have many times seen children lie for a day or two in this kind of stupor, and recover under the use of wine and nourishment. It is often scarcely to be distinguished from the coma which accompanies diseases of the brain. It attacks them after some continuance of exhausting diseases, such as tedious or neglected diarrhœa; and the patients lie in a state of insensibility, the pupils dilated, the eyes open and insensible, the face pale, and the pulse feeble. It may continue for a day or two, and terminate favourably, or it may prove fatal. This affection seems to correspond with the *apoplexia ex inanitione* of the older writers. It differs from syncope in coming on gradually, and in continuing a considerable time, perhaps a day or two; and it is not, like syncope, induced by sudden and temporary causes, but by causes of gradual exhaustion going on for a considerable time. It differs from mere exhaustion, in the complete abolition of sense and motion, while the pulse can be felt distinctly, and is, in some cases, of tolerable strength. I have seen in adults the same affection, though it is perhaps more uncommon than in children.* “It is difficult to describe distinctly the appearance, but it is one which conveys the expression of coma, rather than of sinking; and I remember the first time I met with the affection, the circumstance which arrested my attention, and led me to suppose that the disease was not hydrocephalus, and the state somewhat different from coma, was finding, on further inquiry, that it came on after diarrhœa, and not with any symptoms indicating an affection of the head. The child recovered under the use of wine and nourishment.”†

Dr. Gooch observes,—“I am anxious to call the attention of medical men to a disorder of children which I find invariably attributed to, and treated as, congestion or inflammation of the brain; but which, I am convinced, often depends on, or is connected with, the opposite state of circulation. It is chiefly

* Researches, &c. pp. 310, 311. 1828.

† Effects somewhat similar are apt to follow operations on very young children. The reader may consult Mr. Travers' late interesting work upon Constitutional Irritation—pp. 139—141, published in 1826.

indicated by heaviness of the head and drowsiness: the age of the little patients whom I have seen in this state has been from a few months to two or three years: they have been rather small of their age, and of delicate health, or they have been exposed to debilitating causes. The physician finds the child lying on its nurse's lap, unable or unwilling to raise its head, half asleep, one moment opening its eyes, and the next closing them again with a remarkable expression of languor. The tongue is slightly white, the skin is not hot, at times the nurse remarks that it is colder than natural; in some cases there is at times a slight and transient flush: the bowels I have always seen already disturbed by purgatives, so that I can scarcely say what they are when left to themselves: thus the state which I am describing is marked by heaviness of the head and drowsiness, without any signs of pain, great languor, and a total absence of all active febrile symptoms. The cases which I have seen have been invariably attributed to congestion of the brain, and the remedies employed have been leeches and cold lotions to the head, and purgatives, especially calomel. Under this treatment they have gradually become worse; the languor has increased, the deficiency of heat has become greater and more permanent, the pulse quicker and weaker, and at the end of a few days, or a week, or sometimes longer, the little patients have died with symptoms apparently of exhaustion. In two cases, however, I have seen, during the last few hours, symptoms of oppressed brain, as coma, stertorous breathing, and dilated and motionless pupil.*

But although this morbid affection is scarcely described by former writers, it is, I find, sufficiently familiar to many observing practitioners, on recalling to their minds the circumstances of the singular and interesting state of things attending it, and I am indebted to several friends for notices of cases of this kind.

The morbid appearances in this affection are the effusion of serum under the arachnoid, into the ventricles, generally in rather small quantity, and the deposit of lymph, in slight streaks, in the arachnoid itself.

* Account, &c. pp. 357, 358. 1829.

The remedies for this morbid affection are such as will check the diarrhœa, and afterwards regulate the bowels, and restore and sustain the strength of the little patient. With the first objects it may be necessary to give the *tinctura opii*, and chalk, and afterwards the *pilula hydrargyri*, rhubarb, and magnesia: with the second, *sal volatile*, but especially brandy, and proper nourishment, are to be given according to circumstances. But in this, as in so many cases of infantile disorders, the young milk of a young and healthy nurse is the remedy of most importance,—in the absence of which, asses' milk may be tried, but certainly not with the same confident hope of benefit.

Five or ten drops of the *sal volatile* may be given every three or four hours; and twice or thrice in the interval, five or ten drops of brandy in arrow-root done in water. As the diarrhœa and the appearances of exhaustion subside, these remedies are to be subtracted; the bowels are to be watched and regulated, and the strength is to be continually sustained by the nurse's or asses' milk. The brandy has sometimes appeared to induce pain; *sal volatile* is then to be substituted for it; a dose of magnesia has also appeared to do good.

For the state of irritability, the warm bath is a remedy of great efficacy: for the coma a small blister or sinapism should be applied to the nape of the neck. A state of exhaustion of the general system, as I have observed elsewhere,* by no means precludes the possibility of real congestion of the brain; it rather implies it. In extreme cases there are not only the symptoms of cerebral congestion during life, but effusion of serum into the ventricles of the brain, and even opacity of the arachnoid, are found on examination after death.

In every case the extremities are to be kept warm by flannel, and the circulation should be promoted in them by assiduous frictions. It is of the utmost importance carefully to avoid putting the little patient into the erect posture. A free current of air is also a restorative of the greatest efficacy.

Dr. Gooch adds, "The only difference between the experience of Dr. Marshall Hall and myself seems to be this—that

* Commentaries on Diseases of Females, *passim*.

he attributes the state which I have been describing to the diarrhœa produced by weaning, or to the application of leeches for some previous complaint. In most of the cases I have seen, however, the child has had no previous illness, and the leeches have been applied subsequent to the drowsiness, and as a remedy for it."*

In regard to the difference in the experience of Dr. Gooch and myself, I would observe, that that of Dr. Abercrombie plainly concurs with mine, and that, in all the cases published by Dr. Gooch himself, the bowels had already been disturbed by purgatives, so that a source of exhaustion *had* existed in them. All the cases which I have seen, or heard of, alike involved a state of exhaustion.

The first stage of the affection which has been described, or that of irritability, may, indeed, depend on a previous disordered condition of the stomach and bowels; but the state of torpor is obviously the result of exhaustion.—M. H.

[Although exhausting discharges are for the most part the more frequent cause of hydrocephaloid affection, yet the disease sometimes takes place without any apparent cause of exhaustion, and alterations in the quality of the blood, or in the nutrition of the brain, sometimes induce the same train of symptoms. Hence, defective nutrition of the body, and an imperfect supply of other vital stimuli, particularly air and light, may, by first inducing a state of irritation, eventually induce congestion, or the symptoms simulating hydrocephalus, and in accordance with Dr. Bennett's statement, it is in the feeble children of the poor that hydrocephaloid affections are more commonly seen, except in those cases where it follows direct exhaustion.—H. D.]

On the subject of convulsions as arising from exhaustion, I cannot do better than refer to various parts of the interesting treatise on this subject by Mr. North,† but especially to pp. 101, et seq. and pp. 202, et seq.

* Medical Essays, pp. 358—367.

† Practical Observations on the Convulsions of Infants.

GENERAL OBSERVATIONS ON VARIOLA, WITH CURSORY
REMARKS ON INOCULATION.

It will scarcely be expected that I should treat distinctly of the small-pox, in its several varieties; this disease being in no respect peculiar to childhood, or of a nature to demand a full investigation in a work of this kind. It is noticed only to point out a few principal indications, and to introduce some practical observations in regard to inoculation.*

Though the small-pox is a complaint so incident to the early part of life, that comparatively few children living to the age of eight or ten years, are found to escape it; yet it is not so readily communicated, in the state of early infancy, as has been generally imagined, unless by immediate infection.† This is equally true in regard to many other diseases, as I

* I copy the following observations from Dr. Pearson,§ that inoculation for the small-pox was strangely neglected, till introduced into England from Constantinople; although it had been practised time immemorial in the Barozzo mountains, on the frontiers of Gallicia, in the same rude manner as it is at this day. This intelligence, Dr. Pearson observes, was communicated to him by a Portuguese nobleman, whose opportunities for information and accuracy authorized the Doctor to mention the fact; but an attested account from some of the inhabitants of those mountains is intended for him.—See a book written by Jacobus a Castra de Sacramento, in which Dr. Pearson says he is informed this fact is asserted.

† Some evidence of the propriety of this assertion may be gathered from the consideration of there always existing a far greater number of infants within the month, than of children of any other age; and, for the like reason, a greater number of those under a year old, than of such as are two or three years of age. For it is evident, that every infant dying at the earlier periods, must reduce the number to which those of the more advanced ages might otherwise have amounted; whereas, all the children who arrive to two or three years of age, having been first infants in the month, and of one year old, the number of the latter periods is not diminished by the death of those of a more advanced age. Now, every one knows how very few infants he has heard of having received the small-pox, naturally, in the month, or even within the year; though fewer of these are inoculated than of children above a year old. And this exemption from the natural small-pox does not seem to arise from their not being exposed to the ordinary means of contagion, especially among the middling and lower ranks of people, who form the bulk of mankind; since the medical men

§ Medical Review and Magazine, for August, 1799.

have noticed elsewhere, and the principle may very probably be, that the younger and weaker the subject is, the less of life it possesses, and the less susceptibility it has for these complaints.

The poor furnish frequent instances of the truth of this observation. I have attended where children born in an air, saturated, as it were, with the miasma of this disease, and even lying continually in a cradle in which another child has died a few days before, have, nevertheless, escaped the disease, and sometimes, when they have slept together in the same bed with one loaded with it. Hence it appears, that highly-tainted air, and even personal contact, are often insufficient to communicate the virus. Yet we know that infants are very easily infected, receiving the small-pox by inoculation as readily as adults; though neither are at all times equally susceptible of it.* Perhaps this latter circumstance may not always be sufficiently attended to; the mode of inoculation being often blamed, when its failure may be owing to the indisposed habit of the child. Possibly, on this account, it may not be perfectly safe to urge it, at such a time; at least, instances are not wanting, where (twice introducing the virus having failed) an infant has had the disease very severely, and even fatally, upon its being repeated a third time. In no other view, I imagine, can the repetition be accounted hazardous; and this holds out encouragement to such, as from any uncertainty in regard to infection, may wish to be inoculated once or more.

who usually attend such lying-in rooms, are very much in the habit both of visiting patients in the small-pox, and of inoculating, all the year round; and even in the higher ranks of life, if gentlemen in the general practice of physic happen to be consulted, the chance of their visiting at the same time infected patients, is not so small as may be imagined; not to speak of the probability there is, that some of the numerous visitors, during the month, may, by accident or otherwise, have been in some infected house in the course of the day in which their visits may be made.

* Dr. Young inoculated several children in the Royal Infirmary of Edinburgh at about a week old; yet in none of them could he perceive the infection to take place; and a respectable physician lately informed me, that he knew a young woman to be inoculated eight times in the course of thirty days, who also at the same time attended several children who had the small-pox from inoculation, and yet was not infected herself. She, nevertheless, caught that distemper about seven weeks afterwards, and died of a confluent sort.

Dr. Richard de Hautefercy * inoculated a young person every fortnight, for a whole year; the first of these operations communicated the disease, and the subsequent ones in no wise injured his health.

In whatever way, however, this disease may take place, it is to be treated as in adults, with but little other difference than what every practitioner is well acquainted with, that of greater caution and tenderness; as infants cannot bear the powerful antiphlogistic regimen and evacuations, often proper for the other.†

In the mild, distinct small-pox, the eruption does not appear till the fourth day, inclusive, from the attack; but in the severe, confluent kind, on the third, and even sometimes early on the second day. In the former, also, the fever and other complaints usually vanish, upon the eruption appearing on the skin, whereas in the confluent, however it may abate for a short time, the fever is rekindled, and increases with the progress of the disease. There are likewise some peculiarities in regard to young children, both in the mode of attack, and in the symptoms attending the latter stage of the disease, which may be slightly noticed in this place. The vomiting, shivering, and pain in the back, and head, are rarely succeeded by a sweat in infants, and are far less common in all young children than adults, under any of their complaints, and are less commonly salutary or critical. In the progress of the disease, there is likewise as frequent a difference, children having usually a purging in the bad confluent sort, in the place of that salivation which usually appears in adults; and demands a judicious management. It may, therefore, be further remarked, as too common an error, possibly, that of procuring stools about the turn of the pock, when infants have this disease pretty full, whether of the distinct, or the confluent kind; children sometimes sinking suddenly after one or more copious stools, who would be in less danger from remaining costive at this period of the disease. These circumstances, as

* Nic. Rosen Von Rosenstein.

† Ex toto, non sic pueri, ut viri, curari debent.—*Celsus*, lib. iii. cap. 7, p. 134.

well as their tender age, will call for some little diversity in the treatment; with all which, however, the reader is supposed to be acquainted, who will be careful to make the proper discriminations in this complex disease.

[Notwithstanding the diminution in the mortality by small-pox, first from the benefit of inoculation, and secondly from that of vaccination, the disease prevails at times epidemically.

The year 1838 was remarkable for the prevalence of small-pox throughout this country: in that year 16,268 persons died of the disease in England and Wales; of which number 3817 died in London; and further, out of 9762 persons, who died of it in 1837 and 1838; that of every nine persons who die of small-pox in England seven are below the age of five years. (Gregory.) The continued existence of the disease, therefore, should be borne in mind, and proper precautions taken to guard the community against it.—H. D.]

INOCULATION.

[The practical results of inoculation show that its influence in lessening the mortality of small-pox was something quite extraordinary, and scarcely credible. With ordinary precautions in the choice and preparation of subjects, not more than one in five hundred cases will terminate unfavourably. H. D.]

I shall drop a few words on this subject, because parents are very apt to fall into great mistakes respecting the age and circumstances most proper for this operation, and sometimes draw medical people into an imprudent compliance.

It has already been remarked, that young infants are not very liable to contagion, which is surely an argument against early infection, if it be attended with any peculiar hazard, as it most certainly is. Whereas, it is too common an opinion that a very young infant, sucking at the breast, is the fittest subject for inoculation. Children are then said to be clear from humours, their blood mild and balsamic, their food innocent, and their minds free from all violent passions. But all these advantages may be counterbalanced by the delicacy

of their frame, their disposition to spasm, and their inability to struggle with a severe attack of the disease, if it should chance to fall to their share. And such, indeed, are the facts; infants usually have the small-pox very lightly, whether taken naturally or from inoculation; though in both there are a few instances of their expiring in a fit at the time of the eruption, the risk being greater also the younger the infant may be; and they seldom get through the disease, if they are full, or it proves of the confluent or malignant kind. And this furnishes a peculiar objection to inoculating infants at the breast, which arises from their frequently lying so much on the arm of the suckling mother, or nurse, especially in the night; the heat exposing them to a much more copious eruption, than children who are weaned. This I have seen clearly exemplified in the instance of a child whose mother could suckle only with the right breast; the consequence was, that the left side of the child was perfectly loaded with the eruption, (though the pock was of the distinct kind) whilst the other had only a moderate sprinkling. The child, however, sank, under the secondary fever at the end of five or six weeks, though turned of two years old; the only child I have known to die of an inoculation at so advanced an age. A similar instance is related by Mr. Moss; who not being able to prevail on a young woman whom he had inoculated, to keep her feet (which were very cold) out of the warm ashes of a hearth-fire, at the time of the eruption; they were in consequence so loaded with it, as to appear one continued blister; though the disease was very distinct, and went on favourably in other parts.

I am aware that many children are inoculated very young, and even in the month, and generally with very good success: but the frequency of this practice, among eminent surgeons, is owing to the urgent solicitation of parents, and their fear of contagion. I cannot therefore avoid saying, that however few may die under inoculation, under any circumstances, the fact is, that the far greater proportion that I happen to have had an account of, is amongst infants under six months old.

A remarkable proof of this disproportion appeared a few years ago, under a general inoculation at Luton, during the progress of a malignant small-pox, which had carried off one half of those who were attacked by it in the natural way. In the midst of this fatality, twelve hundred and fifteen paupers were inoculated, through the humanity of the then Bishop of St. David's,* many of whom refused all preparatory medicines, and were besides addicted to the use of strong liquors; nevertheless, out of the twelve hundred and fifteen only five died, all of whom were infants under four months old. Seven hundred adult people of better condition, in the same neighbourhood, were inoculated a short time afterwards, and with the like good success as the former.

From this view of the matter, it is pretty evident, I think, that this operation ought, in general, to be postponed to a later period, which is pointed out by the child having cut all its first teeth; to which may be added, another observation from the well-known fact, that more than fifty children die under the age of two years, of other complaints, to one that dies of the natural small-pox. Should it, however, be in the same house, or prevail in the neighbourhood, and the parents find it difficult to remove the child out of the way, it may run a less risk by being immediately inoculated, as that operation is now so well understood, and successfully conducted, than by taking the chance of escaping the infection, or of recovering from the disease, if it should happen to take place. I shall just observe, however, on this head, that the late Professor Monro recommends the use of a bath of water and juniper berries, and fumigating the chamber with the juniper tree, during the course of severe small-pox, which is said to have succeeded in eight or nine instances as a preventive.

The inoculation of pregnant women being, in certain instances, dangerous to the infant, it is presumed that it cannot be totally foreign from the subject, to annex a caution on that head, it having, until of late, been generally imagined that

* See a Tract on Malignant Fevers, by the late Sir William Fordyce, 1790.

the child is not infected by the parent passing through the small-pox, whether from inoculation or otherwise. It is, indeed, comparatively rare that the unborn foetus takes the disease, however severely the mother may suffer by it; yet, from a very accurate account published by Dr. Pearson, and some cases by Messrs. Kite and Turnbull, the fact is established as the result of much experience and reflection, where the parent has been infected after the sixth month of gestation. Previous to that period, however, the foetus (whatever be the cause) has very seldom been known to take the disease; and later than that, it is presumed, few mothers would be inclined to submit to the operation, unless from some urgent necessity. The parent, it is added, is not in much additional danger from being inoculated in a state of pregnancy, unless the disease should prove considerably more severe than it is ever expected from inoculation: but when communicated to the foetus, the infant always dies. One instance of infection at an early period of gestation, has lately been adduced by Mr. Rumball, of Abingdon, that does not precisely accord, the foetus taking the infection when its mother had only completed the fourth month of gestation. She was then seized with a natural small-pox of a bad confluent kind, and recovering with difficulty, was delivered, at the end of the seventh month, of an infant who bore strong marks of the disease, and was born alive, though it survived only half an hour.

[Dr. Jenner has detailed two cases, which prove very satisfactorily, that a foetus in utero may contract small-pox, provided the mother be exposed to the contagion, although she herself do not take it. An infant born under these circumstances sickened for the small-pox five days after birth, and twelve from exposure to contagion.—H. D.]

VACCINE INOCULATION.

[Mankind are indebted to Dr. Edward Jenner, of Berkeley, in Gloucestershire, for arresting the destructive career of small-

pox, by the introduction of vaccination. It appears to have engaged his attention from 1770 to the 17th of May, 1796, when he first vaccinated a boy eight years of age, who being tested with small-pox on the 1st of July following, was found to be unsusceptible.—H. D.]

The extent to which vaccine inoculation has been practised, and the attention which has been paid to its progress and effects, have established a body of evidence upon the subject, which is highly satisfactory. Not only have medical gentlemen of the most respectable talents made it the subject of their attention, but public institutions have been founded and supported by the legislature, which have at once served to ascertain its merits, on the largest scale, and to give it universal spread. The result appears to be, that vaccination, though not an infallible preservative from the contagion of small-pox, is one in so great a majority of instances, as to render it highly probable, that if it were universally adopted, the small-pox would in a few years become entirely extinct. In the island of Ceylon, near 150,000 persons have been vaccinated, and the happy consequence appears already to have followed; the small-pox not having appeared there since February, 1808, except in a few individuals who had not been vaccinated, and who caught it from a boat that landed at Jaffapatnum from the Malabar coast. But its spread as an epidemic in that settlement is no longer apprehended.

By a report of the Vaccine Institution in Broad Street, it appears that only nine cases of failure had occurred in the practice of that charity in five thousand that had been inoculated; and that all the authenticated cases of failure which had taken place amounted only to forty-three, which, among the many thousands who have been vaccinated in this country, is a proportion probably less than that in which small-pox has taken place twice. The latter occurrence has happened three times in patients who have been under the care of one respectable practitioner at the west end of the town.

It is probable, that in many cases where vaccination has failed, some error has been committed as to the previous state

of the patient, or the progress of the vesicle afterwards. It seems important, therefore, in order to perfect security, that the following particulars should be strictly attended to.

The child to be vaccinated should be at the time free from fever and every eruptive disease. If any irritation from teething arises, the gum should be lanced. The lymph employed should be taken from a decidedly characterised cow-pock, which is proceeding regularly through its respective stages, and it will be more certain of producing the disease, if it is taken before the tenth day. "If the infectious matter produce the required effect, in three, four, or five days there will be seen a red spot, like a small gnat-bite; in six or seven days, a small vesicle will appear; in nine days, a circular vesicle (improperly called a pustule) will be found as large as a pea, or from about two-tenths to four-tenths of an inch diameter, usually surrounded by a red areola. By the eleventh day, the vesicle begins to scab, or grow dry, and turn black in the middle, and the areola becomes more extensive. By the fifteenth day, but often later, the pock becomes a mere scab, circular, prominent, well-defined, of a blackish or mahogany colour, adhering firmly; but the areola disappears. Unless it be separated by violence, the scab does not fall off, in general, sooner than the twentieth day. It then becomes a cicatrix, mostly permanent through life."

Little medicine is required during the progress of the disease. The bowels should be kept regular; and if feverish symptoms arise, a saline draught may be given occasionally. The principal inconvenience which the patient experiences, appears to arise from the soreness of the inoculated part; this will be alleviated when it amounts to any considerable degree, by laying on it a piece of linen dipped in water, which should be frequently renewed till the pain abates.

When the vesicle begins to scab, a dose of any mild purgative may be given, and repeated in two or three days.

If the scab falls off before the part is completely healed, a little spermaceti cerate may be applied, to defend it from the friction of the clothes.

Where any doubt exists as to whether the vaccine inoculation

has been effectual, it should be repeated ; for it appears from the report before adverted to, that re-inoculation with vaccine matter is as good a test of the patient having regularly gone through the cow-pox, as inoculation with small-pox matter ; the constitution being rendered insensible to both diseases, after it has gone regularly through either of them.

It does not appear that vaccine inoculation induces any other disease, as was feared in the beginning of the practice.

In children predisposed to scrofula, that disease occasionally follows, or is called into action by all eruptive complaints, but it more frequently succeeds the small-pox than any other ; the cases in which scrofula has followed the cow-pox will bear no comparison in number with the melancholy objects in whom small-pox has produced it, with its most dreadful symptoms. As it is also evident, in the experience of every practitioner, that scrofulous affections less frequently appear after the inoculated than the natural small-pox, (and it is presumed, as being a less severe disease, it produces less excitement of the system,) so it is not to be wondered at that they still more seldom occur after vaccination.

It is to be hoped, therefore, that the great mildness of this preservative from so dreadful a disease as the small-pox, will ere long cause it to be universally adopted ; and that vaccination will prevail over the erroneous representations of those who, for want of better information, or from unworthy motives, still continue to oppose it, and to leave the helpless and innocent offspring of the poor exposed to one of the most destructive maladies to which the human body is liable. But while we recollect, that inoculation for the small-pox had to wade through a torrent of the like obloquies, and finally triumphed over them, we have further reason to hope, that the hour of cool reflection is at hand, when the sober good sense for which our nation has long been remarked will be no longer sullied by a fastidious rejection of a far greater blessing.

I shall close this account with a few observations on facts. 1st. In regard to the vaccine inoculation failing to take effect ; this is no more than has occurred in inoculation for the small-pox in the hands of the most eminent practitioners ; the system

not being always disposed to receive that, or other infections, and poisons, and yet becoming susceptible a short time afterwards. 2ndly. In regard to various eruptions, to scrofula, and other conceived ill consequences of vaccine inoculation, I would remark that they are comparatively very few; that they are more frequent in families not otherwise the most healthy; and are very far less numerous than the complaints that follow either the natural small-pox, or inoculation for that disease. 3rdly. That it is notorious that the proper vaccine virus has not always been employed, nor been taken at the proper period of the disease. 4thly. That where children previously properly vaccinated, have afterwards taken the small-pox, it has generally proved very favourable, and has not been attended with secondary fever; nor have the pustules either been numerous, or continued so long as in the natural small-pox, or in those from inoculation for that disease.

Mr. Bryce of Edinburgh has suggested two means to be resorted to, in order to discover if the system has been affected, so as to have a complete change induced by the vaccination.

1st. If a second inoculation be performed on the fifth or sixth day after the first, a vesicle will arise as usual, but it will be surrounded with an areola, nearly as early as the first one.

2ndly. If a second operation be performed any time after the twelfth day after the first inoculation, some degree of inflammation will be induced; but if the system have been affected, no regular vesicle will be produced. But, inoculation for the small-pox, he adds, is the most satisfactory test.

[Occasionally we meet with persons, who, from some peculiarity of habit, are wholly unsusceptible of the vaccine poison in whatever intensity, and by whatever mode it is applied. The proportion of mankind who exhibit this singular idiosyncrasy is very small; and in these for the most part the insusceptibility has been found to extend to both poisons. The insusceptibility to the vaccine poison is in some cases obviously dependent on constitutional weakness, apparent in the slowness of dentition, the imperfect ossification of the head, and the emaciated state of the body. Either no vesicles follow the

insertion of vaccine lymph, or they are small and imperfectly developed. In such cases the indisposition to receive cow-pox is only temporary. In the former, where idiosyncrasy is the cause of the phenomenon, the inaptitude continues during life.

A perfect vaccine scar should be of small size, circular, and marked with radiations and indentations. These show the character of the primary inflammation, and attest that it has not proceeded beyond the desirable degree of intensity.

Until the eighth day the constitution seldom sympathises; at which period there is commonly some degree of restlessness, with a hot skin and disturbed nights. This febrile state lasts for two or three days; there is, however, much variety observable here.

Some children suffer slightly in their general health throughout the whole course of vaccination, others appear to be constitutionally affected, although the areola be extensive, and the formation of lymph abundant. It is not uncommon to find the child's body covered with a papular eruption, of a lichenous character, from the ninth to the twelfth day, or even later.

Vaccine lichen is sometimes so intense as to be followed by minute vesicles; but this latter appearance is very rare. This eruption often occasions great anxiety in the mind of the parent, from a suspicion that small-pox is coming on. It is an accidental occurrence, chiefly attributable to the delicacy of the child's skin, and fulness of its habit. Like the constitutional irritative fever, it indicates that the disease has taken effect on the system, but it is not deemed essential to the success of the process.

Irregularities or varieties.—One of the most common of these is where the vesicle, at a very early period of its course, becomes red and itchy—the child rubs and scratches it—to which the subsequent irregular appearances are unjustly attributed. A small acuminate or conoidal pustule will be perceived on the sixth or seventh day, surrounded by a slight areola of irregular shape; the vesicle containing an opaque straw-coloured fluid, instead of a clear transparent lymph. The succeeding scab is

small, and drops off prematurely. In a second variety, the specific inflammation is very violent, the areola extending from the shoulder to the elbow, and sometimes running into genuine erysipelas. The vesicle, instead of drying into a hard scab, is converted into an ulcer, which discharges profusely, leaving behind it a large scar, in which neither rays nor indentations can be traced. Much temporary inconvenience, but no permanent ill consequence, results.

Provided the poison has fully affected the constitution on the eighth day, all that happens afterwards is immaterial in respect to the security of the child. Little importance is to be attached to the cicatrix, as an evidence of the perfection or imperfection of the vaccine process. Perfect security is compatible with a small and scarcely distinguishable cicatrix, and with no cicatrix at all; at least, none perceptible five years after the operation.

A third variety consists in the appearance of a vesicle without areola, similar to that which occurs where the patient has previously had the small-pox, or is labouring at the time under some febrile derangement.

"Small-pox and cow-pox sometimes run their course simultaneously, without mutual interference. At other times the cow-pox is retarded. Occasionally they restrain and modify each other's actions. It may be further stated, that extraneous fever, however excited, restrains the growth and modifies the normal progress of the vaccine vesicle. It never reaches perfection unless the system be in a sound state. If, therefore, the variolous germ be received into the body quietly, and eliminate itself with little constitutional disturbance, vaccination may advance *pari passu* with the small-pox, and complete its series of changes undisturbed."

The surgery of vaccination.—This resolves itself into the selection of the lymph, the mode of making the incision, and the number of incisions necessary to insure a full effect. All observers have agreed that the virus should be taken in a limpid state from the vesicle, and between the fifth and eighth day, before the areola is formed; but the eighth day, for all practical purposes, is the most appropriate; after this the

poison becomes diluted with serum, or otherwise so changed as to become effete or noxious.

Having selected a well-formed vesicle, we make, with the point of a sharp lancet, three or four slight punctures on its elevated margin, by which the several cells contained in the vesicle will be penetrated, and the lymph will exude. The best situation for introducing the virus is over the insertion of the deltoid muscle. The skin being stretched, the charged lancet is to be introduced obliquely between the cuticle and cutis, keeping it in the wound a few seconds, and then wiping it on the part. Some operators scarify or make a few scratches on the skin, on which they smear the lymph; provided the lymph be good, it is of little consequence in what way the virus be applied; but the most uniformly successful mode is by incision.

3. On the first introduction of vaccination, one vesicle was held to be sufficient; then several were recommended. In Germany great importance is attached to the raising of numerous vesicles, it being a received doctrine in that country, that unless some decided constitutional effect be produced, little reliance can be placed on the process as a security in after life. There is no doubt that the greater the number of vesicles, the greater will be the local inflammation, and on this theory the greater will be the probability of constitutional sympathy. In general it may be well to make two incisions in each arm, and at such a distance from each other, that the vesicles shall not become confluent. From these sufficient constitutional irritation will be produced, and we shall always be liable to obtain abundant lymph, leaving at the same time one vesicle entire. As the disease is considered to be strictly local till the eighth day, we may conceive it possible, previously to that period, to prevent the constitutional affection by removing the lymph, on the absorption of which it is altogether dependent.

Lymph recently derived from the cow possesses so much activity, that a single incision made with it is equivalent to six or eight made with lymph of minor energy that has passed through the human constitution.

Vaccine lymph should always be used in a fluid state, direct from the arm whenever practicable. When fresh lymph cannot

be obtained, other means must be had recourse to. Vaccine lymph may be preserved fluid for two or three days in small bottles, with projected ground stoppers, fitted to retain the matter, or in small capillary tubes, having a central bulb, or the lymph may be received from the punctured vesicle on small squares of glass of similar sizes, allowing it to dry, and then covering one piece of glass with another, and folding the two up in a portion of moistened bladder, or gold-beater's skin; or thin-pointed blades of ivory, well charged with lymph, and carefully dried, will retain their activity for a considerable time, and, enclosed in sealed paper, afford a most effectual mode of sending it abroad; or dried scabs kept in a well-stopped phial answer very well, but require attention in the moistening for use. The dried scab, or crust, is the limpid virus in a concentrated state. In using the lymph from the glass it should be moistened with the smallest possible portion of cold water from the point of a lancet, and well dissolved, and then applied in the same manner as the recent lymph. When employing ivory points, or tubes, an oblique puncture must be made as usual with the lancet, into which insert the ivory, which should remain for a minute, and then withdrawn, wiping it frequently over the puncture. The most favourable age for vaccination is in the second or third month, when the infant has overcome the irritability which occasionally occurs in early infancy, and prior to the irritation arising from dentition.—H. D.]

VARICELLA, OR CHICKEN-POX.

Though this disease is usually a very light one, it merits a few words, not only because more incident to children than to adults, but, also, because it is sometimes mistaken for the mild small-pox, which it sometimes exceeds in violence: it is now and then even attended with danger. The danger is, indeed, so uncommon, that the disease has been very seldom noticed by medical writers; and even Dr. Heberden, who was among the first that obliged the public with a distinct account of it, says he never saw any person with so many as three hundred pustules over the whole body. Varicella presents three varieties named from the varying characters of the eruption—the

lenticular, which is peculiarly called chicken-pox; *conoidal*, or swine-pox; and the *globated*, which in Scotland have been called Hives.

Symptoms.—After slight fever, with lassitude, furred tongue, drowsiness, wandering pains of two or three days' duration, an eruption appears mostly on the back, neck, breast, and scalp, first of red pimples, soon forming vesicles, filled with a transparent, straw-coloured, or yellowish lymph, generally distinct, at other times in clusters, forming what has been considered a fourth variety; on the third day the vesicles arrive at their maturity. On the fourth or fifth day they desiccate into granular scabs, which in a few days fall off, sometimes leaving pits, but more commonly mere discolorations of the skin of a few days' duration, not succeeded by any secondary fever.

Diagnosis.—From variola, by the slight degree of initiatory fever, and by the vesicular character of the eruption which consists in simple elevations of the cuticle, which do not suppurate, have no central depression, and come out in successive crops.

This disorder is sometimes denominated the swine-pox, which is only a ranker species of the disease, in which the symptoms may run higher, as well as the pustules become much larger and more purulent. In this case, I have known the head and face as much swollen as I have ever seen them in any distinct small pox, however full, and the pustules containing a yellow matter, with highly inflamed bases, and exceedingly sore; and these have formed a complete mask on the face, after the turn, as is often seen in the small-pox. One such patient whom I was called to visit, a few miles from town, was about sixteen years of age, of a plethoric habit, but very healthy; and what makes it very certain that this complaint could not be the small-pox,* is, that the young gentleman died of that disorder a twelvemonth afterwards: possibly his death was owing to the disease being neglected in the beginning, under an idea that the former illness had really been the small-pox. The latter mistake arose

* So many cases of small-pox occurring twice in the same individual, have now been ascertained, that this argument cannot be allowed to be conclusive.—S. M.

from an improper answer having been made to my inquiry as to the day on which the eruption had first appeared; (for I was called to make him only one visit, when the pox was on the turn) a mistake the young gentleman's mother had a perfect recollection of after I was gone, and of which I reminded her upon being called to visit her son in the small-pox only the day before his death.

This case strongly verifies the remark of Dr. Heberden, that this complaint can, in some instances, be distinguished from the small-pox only by its quicker progress towards maturation, and the shorter duration of the pustules; a watery vesicle always appearing on the second or third day from the eruption, and the turn, at the furthest, taking place on the fifth. In young children a teasing cough sometimes comes on about the time that the eruption is complete, and continues until two or three doses of physic have been taken; which on account of the cough seems to be necessary.

The symptoms preceding the eruption are sometimes so slight, that even where the eruption has proved pretty considerable, the disorder has not been expected so soon; though, from its being in the family, the closest attention has been paid to it.

The treatment of it differs nothing from that of the mild, distinct small-pox; but it rarely calls for much attention, and only when a patient may have it very full; or, as sometimes happens, when a second crop appears after the first has dried off.

RUBEOLA, OR MEASLES.

[Measles at the commencement cannot be distinguished from common catarrh. There are usually languor, shivering, heat of skin, thirst, hoarse, dry, croupy cough, frequent sneezing, suffused and watery eyes, intolerance of light, alternations of heats and chills, and quick pulse; nausea and vomiting sometimes occur, and the bowels are in some instances relaxed, or in others constipated. These symptoms are more or less intense in different cases, being sometimes very slight, and scarcely attracting attention; at other times exceedingly severe, and accompanied with delirium, while the affection of the

lungs amounts to actual inflammation. There is usually an exacerbation of fever towards evening.

Generally at the end of the third or beginning of the fourth day, or seventy-two hours from the occurrence of rigors, an eruption begins to appear in the form of small red spots, close set, or confluent, of a somewhat crescentic form, and slightly elevated above the level of the surrounding skin. The eruption is first seen on the forehead, and gradually spreads over the whole body. It is of a dingy red colour, very different from the vivid redness of scarlet fever. On the appearance of the eruption the catarrhal symptoms and the accompanying fever often subside completely; at other times they are aggravated, so that on the second or third day of the eruption it is not uncommon to meet with severe cough and dyspnoea, the measly catarrh merging in acute pneumonia. In severe cases the stomach and bowels are often very much disturbed during the first days. On the second day the eruption on the face is most vivid, and as it declines on the face, reaches its height on the extremities; in about five days it completely disappears from the whole body; a slight discoloration of the skin commonly remains for a short time, which in a few cases goes on to desquamation.

Variations in the course of the eruption often occur; it may be retarded or accelerated in its progress, and it is not unfrequently accompanied by an eruption of miliary vesicles, filled with transparent lymph, so as to create a suspicion of the disease being small-pox: this form of measles has been called *rubeola variolodes*. Another anomaly is the reappearance or exacerbation of the rash, after having reached or passed its regular crisis.

Sequelæ of measles.—All these have an inflammatory character. The decline of the eruption is not always followed by the subsidence of the other symptoms; a considerable degree of cough, or difficulty of breathing, often remains; the pulse continues frequent and tense; and in patients of a scrofulous diathesis this state of disease occasionally terminates in hæmoptysis, hectic fever, and phthisis. In other cases diarrhoea comes on, which Sydenham is said to have been the first to observe is

often relieved by blood letting. Among other consecutive affections may be enumerated ophthalmia, swellings of the lymphatic glands of the neck, chronic eruptions of a porriginous character, discharges from behind the ears, ulcers at the corners of the mouth, and disorders of the bowels, ending in mesenteric disease. These distressing sequelæ of measles are chiefly met with in those cases where the onset has been irregular, or where the normal progress of the disease has been in some measure disturbed. Sometimes, however, inflammatory symptoms of an urgent kind will supervene when the practitioner is least prepared for them, and the patient should therefore be attentively watched during the whole period of convalescence.

Varieties of measles.—1. *Rubeola sine catarrho* is characterised by an eruption precisely like measles, but is unaccompanied by any catarrhal symptoms. Patients so affected enjoy no exemption from the attack of true measles. By far the larger portion of such cases are in reality febrile lichen, or roseola. Dr. Gregory says, if the initiatory fever extends to seventy-two hours, the disorder is measles, whether catarrhal symptoms be present, or not; on the other hand, if a rash of a rubeolous character succeeds a fever of twenty-four or forty-eight hours' duration, the disease is not measles; this variety will now and then precede the true measles.

2. *Rubeola nigra.*—Where the eruption assumes a peculiarly dark hue, it is occasionally unaccompanied by any other deviation from the ordinary progress of the disease; at other times the case assumes a typhoid character, and petechiæ are interspersed with the eruption.

Pathology.—The measles arise from a specific contagion, the latent period of which has occasioned some difference of opinion, owing chiefly to the circumstance of the initiatory catarrhal fever being considered, or not, as constituting part of the incubative stage. The general law appears to be, that rigors occur on the eighth day after exposure to the contagion, and the eruption appears on the eleventh; the period, however, admits of considerable extension, perhaps depending on individual susceptibility, for it has happened that children in the same family who in all probability were exposed to the influence of

the contagion at the same time have had the disease a fortnight after each other.

Diagnosis.—Measles is distinguished by the character and general aspect of the eruption and duration of the eruptive fever. During the initiatory fever the nature of the disease can only be guessed at from collateral circumstances, as exposure to infection, or the existence of an epidemic.

Prognosis.—Measles in itself is not a dangerous disease; but in forming a prognosis we must take into account its liability to complication with other affections, as pneumonia, or hydrocephalus, or mesenteric fever. Much, however, will depend upon the season. In mild and temperate weather the prognosis will be more favourable than in a cold or inclement winter. The character of the prevailing epidemic, which at one time will assume a malignant character, and at other times an unusually mild one, together with the previous general health of the patient, should also have some influence on the opinion given.

Inoculation of measles was performed by Dr. Home, of Edinburgh, by applying to an incision in the skin cotton dipped in the blood of a person labouring under the disease; and by Mr. Wachsel, with lymph, from the measly miliary vesicles which occasionally appear. In both ways the affection was communicated; but it does not appear that the disease was at all mitigated, and the practice has not been followed. Measles delays the progress of vaccination, and of the pustule of the inoculated small-pox. Cases have occurred where small-pox and measles have run their regular course together in the same individual.

Treatment.—In the ordinary or simple form of measles, an antiphlogistic plan is for the most part advisable.

The apartment should be of a well-regulated temperature, rather warm than otherwise, but it should by no means be kept close or hot. The diet should be light, and consist of broths, light farinaceous puddings; mild subacid fruits and roasted apples, in moderate quantities, may be allowed, with a plentiful quantity of diluent drinks; for medicine, the saline mixture, or the *mistura amygdalæ*, with nitrate of potash, may

be given, to which some *vin. antimonii pot. tart.* may be added; and if the cough is troublesome, *syr. papaveris* also; the bowels may be regulated with some saline aperient, if required; but in the early state active aperients are very objectionable. Where there is much heat of surface before or after the eruption, sponging the skin with tepid water and vinegar will be very conducive to the comfort of the patient. These directions are all that is required for the management of simple measles.

Attention should, however, be paid to any symptoms of local inflammation which may arise, and the state of the respiration should be carefully watched. It may be observed that the oppression of the respiration and the cough which accompany the first appearance of this and of other eruptions do not appear to depend on true inflammation, as they often go off suddenly; they may, therefore, generally be left to themselves. But if after the completion of the eruption the cough and dyspnœa become aggravated, or accompanied by pain in the chest, one, two, or three leeches, according to the age of the patient, should be applied; and if the symptoms indicate confirmed pneumonia, which forms one of the most dangerous complications of measles, the most vigorous treatment should be adopted as recommended under the head pneumonia. Again, should any symptoms arise indicating congestion of the brain, such as head-ache, extreme intolerance of light, or convulsions, the treatment laid down in the chapter on hydrocephalus should be put in practice without delay. Local inflammations and congestions commonly appear as a kind of metastasis, suddenly setting in simultaneously with a premature disappearance, or partial fading of the eruption; under such circumstances our treatment should be conducted with a view of causing its reappearance; for this purpose a partial or general warm bath for ten minutes will often be most useful, followed by some mild diaphoretic, or such other treatment as the prominent symptoms may indicate.

When the measles assume the malignant or typhoid form, characterized by receding eruption, cold extremities, derangement of stomach, tenderness of the abdomen, petechiæ, or

ecchymosed patches of eruption on the surface, frequent and unhealthy stools, sometimes streaked with blood, livid or dusky red colour of the fauces, great oppression of the præcordia, accompanied either with wild delirium, or with shrunken features and coma, recourse must be had to the warm bath, after which mustard poultices should be applied to the epigastrium and feet; wine whey and other cordials may be given, together with the carbonate of ammonia, and other diffusible stimulants.

It is often a difficult point to decide whether these symptoms depend on a state of inflammatory congestion or debility. Dr. Watson says, theory would often dictate the loss of blood, either general or topical; but if it be resorted to under these circumstances, the patient often loses more by the debility which is induced, than is gained by the relief afforded to the circulation within the thorax. The malignant form of measles sometimes prevails epidemically, as at Plymouth, in 1745, in London, in 1763, and in Edinburgh, in 1816; at other times it shows itself sporadically, while the general character of the epidemic is inflammatory. The circumstance may then mostly be traced to the weakened condition of the child, the result, probably, of some preceding disease depressing and exhausting the powers of life. In these almost hopeless cases children may die in forty-eight or sixty hours; some asphyxiated by the condition of the air passages; others comatose, or convulsed; others, again, worn out more slowly by diarrhœa and bloody stools.

Notwithstanding this formidable train of symptoms, we ought not to relax in our efforts, as by care and attention many of these most discouraging cases terminate favourably.

Great care is required in the management of the many severe affections commonly known as the "dregs of measles." If on the decline of the disease cough continues, and the pulse remains frequent, it will be proper to confine the patient to a very mild, farinaceous, or milk diet, and to give occasionally gentle aperients. Above all, change of air, and a mild country locality, tends more than any other means to their final recovery. H. D.]

GENERAL OBSERVATIONS ON COUGHS.

Previously to treating of the hooping, and what I have termed the spasmodic cough, it may not be unwelcome to students in medicine, that I should premise some slight observations on coughs in general; a complaint in children that we are often consulted for. It is, indeed, always of importance to be able to make proper distinctions in this affection, as it accompanies divers complaints, especially in infancy, and is sometimes a very harmless attendant, while at others it is of serious importance, and calls for its appropriate treatment from the beginning. My remarks here, however, will be very brief.

From what has been said in different parts of this work, it will be very evident that a cough is not always to be considered as the original complaint, like the hooping-cough, any more than a direct consequence of a cold, or of specific pulmonary affection, as in the measles. Where it may happen to be so, enough, it is presumed, has been said under the head of fevers; and the hooping and spasmodic coughs will be presently treated of distinctly. The intention here is principally to remind the reader, that a cough often attends teething, and some bowel complaints, or a foul state of the stomach, as well as a common cold, and inflammatory and other fevers, (which, however, are often suspected whenever children are attacked with a cough, and is a recurring symptom in many delicate habits. Very slight occasions are oftentimes sufficient to excite it in such children, whether from a frosty or damp air, or from any little illness that has reduced the strength, and particularly if the child be of scrofulous habit. Every confirmed glandular affection will, indeed, be attended with a cough, which in that case is of the worst kind, as it is attended with fever, loss of strength, and manifest disease; in the last stage of which the cough becomes permanent.

In every case, therefore, the cause and the attendant symptoms, rather than the mere cough, should be carefully attended to, and especially if the child be costive, or the bowels foul, and

their discharges of an unusually offensive smell. Purgings medicines are in this case the proper remedies, which should frequently be joined with saponaceous ingredients, such as the *agua kali*, *natron ppt.* or *spong. ust.* nothing being more common than an obstinate and teasing cough, especially during the night, when the bowels have been long in a costive state, and the alvine discharges are very fetid, or of a stiff and clayey consistence.

Though I have said my intention has been rather to discriminate the causes, than to direct the precise remedies for coughs, yet it may not be amiss to give a few suitable prescriptions for coughs attendant upon common colds, especially after the period of early infancy. And to this I am inclined, on account of the more ordinary remedies met with in books being usually of the oleaginous kind, and ill suited to the state of the stomach in young people, and, indeed, not always well adapted to adults.

R. Mucil. gum. arab. ℥iij; Mellis acetatis ℥iss; Aq. distillatæ ℥x; Syr. Papaveris ℥ii. Ft. mistura; Addatur p. r. n. Spir. æther. nitrici gtt. xij.

R. Pulv. tragacanth. comp. ℥j; Syr. Limonum ℥ss; Syr. Papaveris vel mori ℥iss; Spir. ætheris nitrici ℥ii; Misce. Ft. Linctus.

R. Mellis acetatis ℥j; Tinct. Tolutan. gtt. xx; Syrup. Papaveris, Syr. mori, āā ℥vj; Misce. Ft. Linctus.

BRONCHITIS.

This is a very common disease in children, and in its complications frequently fatal. It commences variously, and reaches different degrees of intensity, according to the severity of the attack and constitution of the patient.

Catarrhal bronchitis usually commences with coryza, accompanied by slight wheezing, and generally, but not always, with dry cough; the respiration is quick, and the pulse accelerated; there is extreme restlessness, and loss of animation, and in infants inability to suck; the urine is scanty and high-coloured; the state of the bowels is various; sometimes obstinate

costiveness, at other times diarrhœa prevails. The disease may continue in this form for a few days, the symptoms being more or less distressing, and then gradually subside; or it may usher in a more formidable and fatal state of disease. At other times it commences suddenly, with febrile symptoms coming on towards evening, or with alternate heats and chills, succeeded by hurried breathing, cough, and wheezing, which is distinctly audible on applying the ear to the chest, and may, indeed, be felt on applying the hands flat on its opposite sides. There is at first little or no dyspnœa; but the tongue is loaded, the pulse accelerated and full, the face pale and œdematous, with drooping of the spirits, or dulness, which indicate something more than a common cold. Cough is not invariably present, so that this symptom does not always indicate the extent of the disease; and as young children do not expectorate, the disorder of the chest may escape remark until the dyspnœa suddenly comes on, indicating imminent danger. As the disease advances the breathing becomes more quick and laborious, as evinced by heaving of the chest and the alternate dilatations and contractions of the *alæ nasi*. The fits of dyspnœa are generally followed by severe paroxysms of cough, which often terminate in vomiting, on which occasion only the bronchial secretion is apparent, at first consisting of a viscid, watery mucus, and afterwards of a yellowish-white tenacious matter. These exacerbations are followed by remissions, during which the child dozes, and appears relieved, and the pulse becomes less frequent.

Thus the disease may continue, with alternate remissions and exacerbations, for many days, until either a permanent diminution of the symptoms takes place, or an uncountable frequency of the pulse, stupor, lividity of the lips and fingers, &c. supervene, sometimes accompanied by convulsions, and the child dies asphyxiated.

When the disease terminates unfavourably, it usually runs its course in ten or twelve days; when the child is to recover, convalescence generally commences in five or six days; the respiration becomes less frequent, the fever abates, a free secretion being established from the mucous membrane, the

cough becomes looser, and less suffocative. In many of the unfavourable cases the extent of the disease and the copious secretion occasion suffocation more or less rapidly, with somnolency, bloated and livid countenance, convulsions, coma, and, at last, complete asphyxia, and on dissection, congestion of blood, with watery effusion, is found within the cranium.

The more common complications of bronchitis are inflammation of the trachea and larynx; indeed croup seldom occurs in London uncomplicated with bronchitis in some one of its forms and states. Bronchitis forms a frequent complication of measles and whooping cough; it is occasionally associated with inflammation of the brain, and very often in a most insidious manner with remittent fever, and it occasionally supervenes, on scarlatina and small-pox.

“In some rare cases in young patients in whom bronchitis is idiopathic, and not engrafted on any other disease of the chest, in whom the disorder had not appeared severe, extreme difficulty of breathing will sometimes most unexpectedly arise and rapidly terminate in the extinction of life. This is attributed to the permanent obstruction or plugging up of one of the bronchi. The slightest attack of bronchitis may in this way be suddenly transformed into a most serious and quickly fatal malady.” WATSON.

Diagnosis.—The diseases of the respiratory organs so nearly approach to, and run so frequently into each other, as to render it extremely difficult, if not impossible in the severer forms, to draw a line of distinction between them; this, in a practical point of view, is of the less importance in the case of bronchitis and pneumonia, since, under the above circumstances the same mode of treatment is applicable to either.

The cough in bronchitis is always accompanied by wheezing; it occurs in paroxysms, and is mostly attended by vomiting of viscid mucus. In pneumonia it is deeper in the chest, is frequent and short, often hard or hacking. The countenance in bronchitis is usually pale or bloated, and when there is any colour it is in patches; in the more advanced stage the lips are more or less blue, or livid. In pneumonia the flush is more diffused, with intermediate spaces of purplish red. In bron-

chitis percussion gives a clear sound, with a mucous rhoncus; in pneumonia a dull sound, with crepitant rhoncus.

Prognosis.—This will depend very much on the extent of the inflammation. The milder form in a previously healthy child generally terminates favourably. When the inflammation is very severe and general, as indicated by high fever and great dyspnoea, or with the complications before mentioned, the prognosis is for the most part unfavourable, and should be given with caution. If the pulse be very frequent, small, or weak, irregular, or intermittent; if the countenance also be pallid, and anxious, slightly livid, and the lips and the nails of the fingers tending to purple; the danger from asphyxia is extreme.

On the other hand, when spontaneous evacuations occur, with a favourable change in the cough, this becoming more humid in infants, or attended with expectoration in older children, with a diminution of the other unfavourable symptoms, a more favourable result may be looked for, particularly if the disease be uncomplicated, even though it may have been severe.

Morbid Anatomy.—The lungs do not in general collapse on opening of the thorax, the escape of air being prevented by the obstructions in the bronchi. These in most instances contain a viscid, frothy, and sometimes purulent matter; there is increased vascularity of the mucous membrane, mostly extending toward the trachea; the redness is diffused, or in patches of various shades, from a bright crimson to a brown red; and the membrane is mostly thickened or puffy. Bronchitis, in children, is usually complicated with pneumonia; hence the lungs are diseased to a greater or less extent.

Treatment.—This should be most strictly antiphlogistic. If the respiration be much hurried, and there be heat of skin, and great restlessness, some blood should be taken away at once—a child of three years old will bear to lose three ounces. Where cupping can be effectually performed it should have the preference, and the glasses will be the best applied between the shoulders; failing this, a proportionate number of leeches may be applied to the sternum. An emetic should then be given—the combination of ipecacuanha and tartrate of antimony

will best suit the purpose, as it affords great relief, by causing a free discharge of mucus from the bronchi. An emetic, indeed, at the onset, in the milder forms, will frequently cut short the disease. The child may now be immersed in the warm bath, at a temperature of 96° Fah., as high as the middle only; that is, the bath should be confined to the pelvis and lower extremities, and the child kept in not longer than ten or fifteen minutes. The patient should then be wiped dry and placed in bed, with the head and shoulders somewhat elevated. In this way the bath appears to have a useful derivative effect, and also to tranquillise in some measure the hurried circulation. In a short time a dose of calomel should be given, followed in an hour by some aperient, as *pulv. jalapæ, co.* or *pulv. scammonia, co.*, or a dose of the compound senna mixture, so as to excite a free action of the bowels, but by no means to keep up a violent purgative effect.

Mild purgatives are of marked utility in children, and if preceded by an emetic, may frequently do away with the necessity of general bleeding. A saline mixture, with *vinum antimonii*, may now be given; or, should the bowels be confined, instead of the purgative, some saline aperient, as the sulphate of magnesia, in ℞ss. or ℥j. doses, may be added to the saline mixture—commenced with immediately after the calomel. This will be useful, not only as an evacuant, but as a sedative and diaphoretic, and the nausea it sometimes produces is beneficial, by modifying the secretion of the bronchial lining, and facilitating expectoration.

Where distressing cough or great restlessness prevails, *tinct. hyoscyami* ℥ij. may be added to each dose, or the *syrupus papaveris* may be substituted for the simple syrup:—this last, however, is a very uncertain medicine, and is little to be trusted to. The diet should be strictly antiphlogistic—as barley water, toast and water, milk and water; and if the child be still at the breast, the nurse should reduce her diet, and forego all stimulant drinks. In the event of the symptoms being relieved, or the disease becoming more aggravated, we must refer for the further treatment to that recommended in the chapter on pneumonia.—H. D.]

PNEUMONIA PERIPNEUMONIA.

Inflammation of the Parenchyma of the Lungs.—Inflammatory affections of the chest are more frequent in their occurrence, and more fatal in their tendency, than any other diseases to which children are liable; and the tables of mortality show a greater number of deaths from pneumonia than from any other cause.*

Extract from the Registrar-General's Report of the Deaths in the Metropolis in 1842, before the 10th year of age.

	MALES.		FEMALES.	
	Under 5 years.	Between 5 & 10 years.	Between 5 & 10 years.	Under 5 years.
Measles	614	37	33	600
Whooping Cough . .	653	35	59	850
Hydrocephalus . .	868	76	68	677
Convulsions	1493	13	19	1224
Bronchitis	79	4	7	81
Pleurisy	1	1	2	2
Pneumonia	1557	66	67	1418

M. Guersent says, that three-fifths of the children who die in Paris before the completion of the first dentition die of pneumonia.

The above extract has only been selected, as death from other causes bear no proportion.

Some little difference will be observed in the comparative mortality in rural districts.

Pneumonia occurs in infants of a few days old to children of all ages; but is more usually met with in those between the ninth month and third year, or during the period of dentition; at which time children are in a peculiar state of susceptibility, and are disposed to be powerfully influenced by the slightest causes of irritation.

* There is a valuable paper on the peripneumonia of children by Dr. Cuming, in the Transactions of the College of Physicians in Ireland, vol. v. p. 28.

The disease is commonly preceded for a few days by catarrhal symptoms, at other times there will be a condition of general feverishness for a day or two, exacerbated towards evening; with fretfulness, succeeded at night by great restlessness, disturbed sleep accompanied by talking or moaning, out of which the child wakes in a state of alarm. In some instances the disease commences suddenly, and without any assignable cause; and a child having gone to bed at night apparently well, has arisen in the morning with all the symptoms of the disease well marked. The breathing is hurried, (sometimes wheezing,) accompanied by a short dry hacking cough, and a greater or less degree of fever; with this the child is extremely restless and impatient, moans, and dislikes being moved. The thirst is considerable—elder children have an aversion for food. Infants at the breast suck greedily and by starts, drop the nipple and cry, then suck again, often vomiting the milk immediately after unchanged. The lips are of a florid red colour, the cheeks sometimes flushed also, and the conjunctiva injected. The tongue is somewhat dry, and furred in the middle; the bowels are usually constipated, now and then relaxed, and vomiting is not unfrequent. If, while a healthy infant is sleeping, the mouth be gently opened, it will be observed, that it is applied to the roof of the mouth, and that respiration is carried on through the nares; so soon, however, as the lungs become affected, and before any other symptoms exist than general febrile disturbance, and perhaps the vomiting before alluded to, the infant will no longer be observed to breathe solely through the nares, but will lie with the mouth partly open and breathing through it. This imparts to the tongue its preternatural dryness, and the same inability to respire comfortably through the nose, causes the infant to suck by starts. As the disease advances, these peculiarities in the mode of sucking and respiration often become more striking; but it is at the onset of the disease that it is of especial importance to notice them, since they afford valuable indications of its real nature; and they are the more valuable, as they are independent of those adventitious circumstances which may modify so many of the other signs of

pneumonia. There is not always marked dyspnœa at this stage of the disease, and the frequency of the pulse, and respiration is so much modified by position and other causes, together with the general fretfulness and alarm which prevails in young patients, that no very great dependence can be placed on them, and for the same reasons auscultation is scarcely to be relied on. This state may last from twenty-four to forty-eight hours, or longer when the second stage commences. As the disease advances, the respiration becomes more hurried, and difficult, and abdominal; that is, the abdominal muscles are brought into quick action to assist in its performance, and the *alæ nasi* are dilated at each inspiration; with heaving of the chest, and frequently retraction of the head. The average number of respirations in an infant from ten to twelve months old is about thirty in a minute; but when under the influence of disease, the number will be increased to sixty, ninety, or even one hundred in a minute. The cough is now much more frequent, but still retains its hardness, and is of longer duration, and often seems to cause pain, as the child cries when the paroxysm comes on, and endeavours in vain to suppress it; an effort which seems to make it last longer, and recur more frequently. A state of drowsiness and prostration succeeds the before-mentioned restlessness and impatience. The flushed face and florid tint of the lips have disappeared, the countenance now has a puffy, heavy, and anxious appearance, and when the disease is extensive, a livid hue is diffused over the lips, and round the mouth. The heat of the skin is extremely pungent, often unequal and varying at different times, the trunk being very hot, and the extremities, particularly the feet, cold, and the fingers become purple or livid. The thirst is still urgent; in older children the vomiting for the most part ceases. Infants will still endeavour to suck, and when able will do so most greedily, and again vomit up the milk; more commonly the dyspnœa will prevent them sucking, and after making the attempt they will fall back apparently exhausted, or panting, and drop the nipple from their mouths.

Third stage. The respiration becomes more laborious, though somewhat diminished in frequency, and is irregular, several short and hurried inspirations being followed by one or two

deeper and at longer intervals, and these again by hurried breathing. The cough is sometimes suspended altogether, or is less frequent and looser, and is produced by the child's efforts to clear the larger air tubes from the accumulating secretions. The voice is often lost in a hoarse cry or whisper. The face looks sunken; the extremities are cold; the surface of the body is still hot and dry, or bedewed with clammy sweat, more particularly about the head; the pulse is frequent, small, and not to be counted, its beats run so into each other; the child is either restless, tossing about its hands, and turning from side to side, or it lies almost in an unconscious state, yet sensible when spoken to, and fretful on being disturbed. If raised up hastily, or applied to the breast, the great increase of dyspnoea which immediately ensues, shows how seriously the respiratory organs are affected: the livid hue of the face and hands, and turgidity of the veins of the forehead, are further evidence of the great impediment which exists to the arterialization of the blood.

Though the stomach is irritable at the beginning of the disease, it is extraordinary with what difficulty vomiting is excited towards its close. The insensibility is not confined to the mucous surfaces, but extends, more or less, to every part of the body, and particularly to the skin, where we frequently fail in exciting inflammation by the application of a blister.

The child may remain in this state for a few hours, or for a day or two, and life become gradually extinct; or one or a succession of convulsions may occur, followed by fatal coma and death. The disease, however, does not always terminate fatally in this stage, but a kind of imperfect recovery sometimes takes place. The more alarming symptoms subside; the child will take nourishment, and has occasional gleams of cheerfulness; the cough, which had almost or altogether ceased, returns, and is hard and hacking, and though there is no urgent dyspnoea, yet the breath is short; the skin is hot, dry, and harsh; the tongue is red, dry, sometimes chapped, and the mouth aphthous; diarrhoea mostly prevails; the child wastes daily, and dies in the course of a week or two, worn out and exceedingly emaciated.

The unfavourable cases generally run their course in eight or ten days. In favourable cases amendment takes place mostly about the sixth or seventh day, but it is sometimes longer delayed, slight exacerbations recurring every evening, or even twice in the twenty-four hours; and some of the symptoms (the frequency of the pulse particularly) remaining stationary, and extending the disease to two or even three weeks.

Causes.—The most common exciting causes are cold and alternations of atmospheric temperature. Pneumonia often supervenes on other diseases,—as catarrh, measles, whooping cough, and scarlatina. It is much influenced by the season of the year; hence it is chiefly prevalent in the winter months, and it is most fatal in the month of December. Children under five years of age are most obnoxious to it, and of these the far greater portion, or three-fourths of those who die, are between the sixth month and third year, or in the period of dentition.

In eruptive fevers it is common for a great degree of dyspnoea to precede the eruption, and generally cease, as if by magic, on its appearance. In some cases, however, where the eruption recedes, or is not fully thrown out, the dyspnoea continues, and assumes the character of a more permanent disease; this is obviously a congestion persisting and becoming converted by general vascular excitement into an inflammation. The deficient resonance of the chest at the commencement of eruptive fevers, is a physical indication of this pulmonary congestion. The extension of inflammation by contiguity arises from some additional external cause, as when bronchitis becomes complicated with pneumonia in consequence of exposure to cold; or from an additional internal movement, as when, in consequence of a checked excretion, or a too well-nourished mass of blood, such membranous inflammations spread and infest the parenchyma of organs.

The frequent complication of whooping cough with pneumonia appears to depend not merely on a propagation of inflammation; the congested state of the lungs, induced by the cough and imperfect aëration of the blood, has likewise a share in favouring the development of inflammation.

Congestion also occurs in too highly nourished or over-fed children, from their making a larger quantity of blood than can be duly arterialised, and in this way it occurs where small or delicate children are suckled by very robust and vigorous wet-nurses. The lungs are peculiarly liable to the congestion of irritation, and if the cause be applied for a sufficient length of time this congestion may pass into inflammation.

Morbid Anatomy.—The general effects of inflammation of the lungs have been arranged into three stages or degrees:—First, engorgement, or sanguineous congestion; second, hepatization, where coagulable lymph is thrown out by the inflamed vessels, in which state the lung is solid, dense, and inelastic; third, purulent infiltration into the substance of the lungs, from which the pus oozes when an incision is made. For the more particular description of these states we must refer to the works treating especially of morbid anatomy.

A considerable variety in the anatomical character will be produced by the age of the subject. The lungs of young children are more membranous and vascular than those of adults; and from this circumstance, and because the bronchi and vesicles are smaller, the texture feels denser and less crepitating.

The colour, naturally light, and of a pink buff hue, renders the red appearance at this age more visible. Pneumonia is seldom found so far advanced in children as in the adult. After many days' duration it is often found only in the first stage, and its existence for weeks does not bring it beyond the stage of hepatization. The division of the lungs into lobules is more apparent in children, and this anatomical difference appears to be the cause of the frequency of the lobular form of pneumonia in early life, and of the greater immunity from the inflammation which the interlobular texture often exhibits. The margins of the lobes are not unfrequently the only portions found hepatized in those who have died of pneumonia supervening on hooping cough. The suppurative process appears to be retarded by the density of the structure and the tension thence occasioned by the effusion. The morbid appearances, in the greater number of cases, consist in evidences of inflammation of the pleura, such as partial adhesions, effusion of lymph

on the surfaces, and of serous or seropurulent fluid into the thoracic cavity; ecchymoses are also found under the pulmonary pleura. The lungs appear more voluminous than natural from their not collapsing on exposure to air; the substance, in a great majority of cases, is increased in solidity, in degrees varying from sanguineous congestion to perfect hepatization; in some purulent infiltration is present; and in few vesicular ecchymoses. In many there are traces of inflammation of the lining membrane of the bronchi, and in the greater number congestion and effusion of viscid or purulent fluid. Sometimes a large quantity of mucous fluid is present where the lining membrane is quite pale; the accumulation of fluid in these instances being attributable to the inability of the child to expectorate. In a majority the bronchiæ are dilated, and this chiefly where the disease is complicated with whooping cough, caused perhaps by the violent inspirations which occur during the paroxysms of the cough. There is generally dilatation of the smaller branches to a greater or less extent. Sometimes the lungs are studded with tubercles, both on the surface and in the substance, and tubercles are found in the bronchial glands more particularly. Where tubercles are present, the phthisical diathesis prevails, or the pneumonia has supervened on whooping cough, measles, or scarlatina. The inferior and posterior portion of the lung is the part more frequently affected; and it is not unusual to find the upper portion in a healthy state, or a little more congested than natural, and now and then edematous, while the inferior portion is completely hepatized. It would appear as if the morbid process, commencing in the lower part of the lung, had completed its course there, before the superior portion had advanced beyond the stage of consanguineous congestion.

Physical signs.—At some part of the chest a peculiar sound will be perceived accompanying the usual respiratory murmur; it is a fine crackling or crepitating, like that which is produced when kitchen salt is thrown on a heated iron;—this is the crepitant rhoncus. At first the space over which it is heard is very limited, at a more advanced period it may occupy nearly a whole lung: the parts where it is commonly first

heard are below the inferior margin of the scapula, below the axilla, or about the lower margin of the pectoral muscle; parts corresponding to the lower lobes of the lungs, in which situation the air enters less freely than elsewhere. Percussion yields a duller sound at the lower parts of the chest, as compared with the upper. As the disease advances, the sound emitted on the part of the chest corresponding to the hepatized portion is quite dull, and if the disease be extensive, neither the ordinary respiratory murmur, nor the crepitant rhoncus of the first stage is heard, but a whiffing sound, or the bronchial respiration, which is often heard most distinctly during the forcible respiration of coughing.

In the third, or suppurative stage, in addition to the dullness on percussion observed in the second stage, there is sometimes a coarse mucous rhoncus, heard especially at the root of the lungs, or about the lower axillary or mammary regions; and when it is observed to commence where bronchial respiration and resonance have been previously heard, it may be taken as a pretty certain indication of the third stage. Sometimes, however, the bronchial respiration and resonance continue without this sign, and then there is no physical indication of the change. In the event of abscess being formed it will only be ascertained by purulent expectoration, after which a gurgling or cavernous rhoncus will be heard in the corresponding point.

For various reasons auscultation is not easily put in effect in the case of infants and young children, and it is therefore less to be relied on than in adults.

Prognosis.—The prognosis of this disease is always very doubtful, and even in favourable cases should be given with caution, for cases which are slight at first, sometimes take an unfavourable turn, and in the progress towards recovery, there is a chance of a relapse.

When this affection occurs idiopathically it is, in general, much more easy of removal than when it occurs as a sequela of measles, or as a complication of hooping cough.

The danger in this disease is always to be estimated by the violence of the symptoms, and the length of time that may

have elapsed previously to its having been subjected to treatment. The more intense the fever, the more hurried, laborious, and wheezing the respiration, and the greater the inability to expectorate the mucus accumulated in the bronchial tubes, the more unfavourable will the prognosis be, and *vice versa*. When lividity of the countenance, with coma, and a weak, rapid, and intermitting pulse set in, the event is almost uniformly fatal.

It has been before remarked, that in children the disease often continues for a much longer period in the first stage; after some weeks duration presenting only some hepatised points at the margin of the lung, or in isolated lobules. Recovery is sometimes effected by resolution and reabsorption from every degree of pneumonia, but the chances of this favourable termination are very small when the signs of hepatisation have continued for such a length of time, that purulent infiltration has probably occurred.

Critical evacuation, either by sweat or otherwise, is not very marked on the subsidence of the symptoms; moderate perspiration, with a copious deposit in the urine, and also a slight diarrhoea, generally accompany a manifest improvement in the other symptoms. A diminution in the frequency of respiration, attended by a diminished frequency of the pulse, are signs of amendment on which considerable reliance may be placed. As the pulse and respiration are both easily accelerated in young children, they ought both to be counted while the child is in a quiescent state, and before it has been disturbed by the examination of any symptoms.

When the disease terminates favourably, the cough, except in the case of its return after a temporary suspension, becomes less frequent, and sounds more loose, the breathing less hurried and wheezing, the fever subsides, the countenance gradually resumes its healthy hue and expression, and a state of sound and refreshing sleep succeeds to the previous restlessness and inquietude. The fever always continues as long as there is any considerable affection of the respiration.

Sometimes the fever and cough continue for a while after the breathing has become natural, and sometimes the cough

alone continues, and is principally troublesome at night; in some instances the cough is only excited when the child cries, or is vexed, and then it is apt to occur in paroxysms. A return of cough after its temporary suspension is in general to be considered a favourable symptom.

The rapid general improvement which commonly attends the progress of recoveries from pneumonia, indicates rather the restoration of the healthy balance of functions than the entire removal of all local disease; for some dyspnœa and quickness of pulse often remains up to an advanced period of convalescence, and by means of auscultation we discover a cause in the still diseased state of portions of the pulmonary tissue.

Treatment.—In our examination of the pathology of this disease we found ample proofs of its being an inflammation largely affecting the system of bloodvessels, and of the consequent serious relations which the disease when formed bears to the two functions most essential to life—respiration and circulation. We also found that, in the greater number of cases, a congested state of these vessels is the immediate effect of the application of the exciting cause, and precedes that complication of nervous and vascular movements which constitutes reaction and inflammation. Pneumonia in its acute form may be called an exquisite type of inflammation.

The indications to be had in view are three-fold:—1st, to arrest the inflammation before it has proceeded to the extent of effusion; 2ndly, where effusion has taken place, to prevent as much as possible its increase; 3rdly, to adopt such measures as may tend to promote its absorption or expectoration. For fulfilling the first, we must employ those measures called antiphlogistic, of which blood-letting is the chief.

At the onset of disease children bear bleeding well, and there is no disease which more imperatively demands it than pneumonia; almost all medical writers concur in their testimony to its advantages in this disease. The earlier the bleeding is performed the less occasion will there be for its repetition. In infants and children under two years of age leeches may be applied; but in older children venesection is the most efficacious. The application of leeches in young children seems

to produce the same effect as general blood-letting; the quantity of blood to be drawn must depend on the age and vigour of the patient and the intensity of the disease. Under two years of age from one to three ounces of blood is an efficient quantity, and for this purpose four, six, or eight leeches may be applied over the sternum, or on the base of the scapula. Dr. Cumin observes, that in an infant under six months, though general blood-letting may be often required, that the application of three or four leeches to the back of the hand or foot will answer equally well when a vein cannot be found, which is frequently the case; and further, that it is better to apply the leeches to the hand or foot, than to the thorax; for when applied in the latter situation, it is sometimes difficult to stop the flow of blood after the bleeding.

An emetic may be given of a solution of tartar emetic in the proportion of from one-eighth to a fourth of a grain every quarter of an hour till vomiting is produced. Should the child's bowels be confined, this may be followed by a purgative of the compound powder of jalap, or scammony, and after this calomel, in combination with ipecacuanha, in the proportion of one, two, or three grains of the *hydrarg. chloridum*, and gr. ss. or gr. i. of ipecacuanha, every four hours. Some practitioners prefer continuing the tartar emetic in combination with the calomel, but its depressing effect on children has in general led us to prefer the ipecacuanha. With this may be given some saline, and we give the preference to *liq. ammoniæ acetatis*, with or without the nitrate of potash. If sensible relief does not follow in the course of five or six hours, the bleeding should be repeated; and even again after this, should the case be urgent, and the physical symptoms indicate the first stage of inflammation, we should not hesitate to repeat it, with due consideration of all the circumstances; for although children bear abstraction of blood well in the first instance, and perhaps in a second, yet in the generality of cases protracted bleedings are not so well borne. The state of the breathing is to be our chief guide in all cases; and for the most part, even in elder children, we prefer, after the first bleeding, the application of leeches, and as near the seat of disease as possible. The

calomel and ipecacuanha should be continued, and steadily persevered in, until they produce some sensible impression on the disease, or copious green evacuations are produced. Purgation to a great extent is not desirable, and is extremely harassing and enfeebling; yet it ought not to be suddenly checked, as it seldom produces in children the bad effects it does in the pneumonia of adults; and, as expectoration is a less natural process in early life, so its importance is of inferior moment, and does not prohibit the employment of purgatives and other measures that may be thought to counteract it; indeed, when moderate catharsis occurs it is generally serviceable. Where irritable diarrhœa prevails, the *hydrargyrum cum cretâ* may be advantageously substituted for the calomel, a double proportion of the former being generally given. Under similar circumstances, in the latter stages mercurial inunction may be had recourse to; in neglected cases, where the time for depletion and the employment of the more active antiphlogistic remedies are gone by, its beneficial effects are most apparent, and to be useful, it should be rubbed in steadily and perseveringly, in the proportion of ʒj. every four hours. The symptoms will often gradually improve under its employment.

Counter irritants and blisters will be advantageously employed after reducing the more violent inflammatory symptoms. Blisters, applied with the cautions mentioned in the chapter on therapeutics, rarely or never do harm: they may be applied to the sternum, to the sides, and on some occasions to the inner sides of the calves of the legs.

Mustard cataplasms are also extremely valuable applications, and may be applied between the shoulders, or any part where the subsequent friction might interfere with the healing of blisters. In the after stages counter-irritation, with tartar emetic ointment, or solution, is of great utility, and should especially be persevered in where there is any sign of a phthisical tendency.

Sedatives, to diminish the extreme restlessness, and tranquilize the cough.—The *tinct. hyoscyami* may be given in the saline mixture, or when the antiphlogistic remedies have somewhat reduced the inflammatory action. The *pulv. ipecacu-*

anhæ comp., in doses of gr. j. to gr. iss. may be added to each of the powders, as it tends both to tranquillize and to promote diaphoresis.

In furtherance of these views, namely, the promotion of tranquillity and diaphoresis, the warm bath will be a useful auxiliary. The child may be immersed as high as the hips at bedtime, or the feet and legs only immersed as it lies in the bed, or on the nurse's lap. The temperature of the water should be about 98 deg.; its use may be continued for ten minutes, but by no means to cause distress.

In the decline of the disease, when the nights are restless, or perhaps sleep prevented by a hacking cough, a dose of the solution of the acetate of morphia may be given at bed time, and repeated when necessary, and at the same time a mustard cataplasm may be applied for a quarter of an hour over the throat; indeed the mustard cataplasm of itself will sometimes produce a soporific effect.

Stimulants.—In the advanced stage of the disease, when the debility is great, and suffocation appears to be impending, when extensive bronchial respiration exists, characterized by the respiration becoming more laboured and irregular, though diminished in frequency; and if the pulse is becoming more frequent, feeble, and intermitting, or the child be much purged, we must, without delay, have recourse to stimulants. Of these the most effectual is the sesquicarbonate of ammonia, which may be given in doses of one or two grains every hour or two according to circumstances. This may be given in the *mist. amygdalæ*, or in the decoction of senega; and where great restlessness or purging prevails, a drop or two of *tinct. opii* may be most beneficially added to each dose. Chicken, veal, or beef tea, should be given at the same time, as also white wine whey.

It may be proper to state that the diet throughout the disease should be most sparing. If the patient be an infant at the breast the nurse's diet must be reduced, and the child be allowed to suck very sparingly, or be fed artificially with breast milk. In elder children, barley water, milk and water, or rennet whey will be most appropriate. When the inflammatory stage

has passed by, chicken, veal, and beef-tea may be substituted; and latterly, some light tonic, as weak bitter infusions, combined with an alkali, may be usefully employed, together with some counter-irritant to the chest. The child for some time should be carefully watched.—H. D.]

PLEURITIS.

The diagnosis of pleuritis is extremely uncertain in young children. When we observe anxiety and restlessness, with short, hurried, and jerky respiration, painful dilatation of the thorax, quick and more marked contractions of the diaphragm and abdominal muscles; and in the midst of these symptoms, if the cry should preserve its integrity, and present no other alteration than that which arises from fatigue and exhaustion; if on auscultation the sound of respiration be not heard at any part of the thorax, while the cry is complete and free, and when there would appear as if there existed effusion without hepatization, the presumption is, that the child is affected with pleurisy. The peculiar character of the voice styled *Ægophony* is the purest physical sign of pleurisy; but is to be met with only at an early period of the disease, as it is coexistent with only a slight degree of effusion.

Pleuritis rarely, if ever exists uncomplicated with pneumonia, and will require a similar treatment.

Pericarditis.—Appearances indicative of this affection have been found after death, but they have been generally considered as an extension of the inflammation from the pleura.—The treatment similar to that of pneumonia.—H. D.]

[Thoracic affections are very apt to assume a chronic form, or a disposition to return. In either of these cases, the long-continued application of a liniment of opodeldoc and ammonia, night and morning, is of the most extraordinary value and efficacy. It should be continued for months, not to say years.—M. H.]

PERTUSSIS, OR HOOPING-COUGH.

This complaint, called also *tussis ferina*, is a disease unknown, probably, to the old writers; and is supposed to have been conveyed into Europe from Africa, or the East Indies; the Greek and Arabian physicians make no mention of it, and indeed it has not been well understood in any part of Europe, till of late years. Hence, probably, its great fatality in Stockholm, where, from the year 1749 to 1763, inclusive, 43,393 children are supposed to have sunk under it. Willis supposed its seat to be in the breast, Harvey makes it a disease of the stomach, and Astruc an inflammation of the larynx and pharynx, produced by an original affection of the former, through indigestion.

The disorder is highly infectious, and one of those that never appear a second time. It more commonly takes place between the age of four months and twelve years; but may attack at any time, adults being liable to its influence, though much less so than children. It often begins as a common cough, and is attended with the usual symptoms of having taken cold, but in its progress soon becomes more severe; though the longer it may be before it discovers itself by the *hoop*, the more favourable it is likely to be. A flux of rheum frequently comes from the mouth, nose, and eyes, and the food is thrown up, together with a viscid phlegm, often in great quantities, in the coughing fits; between which the child appears to be perfectly well, and eats its food very heartily. These are the common symptoms; but when the disease is violent, and has continued for some time, they become greatly aggravated, especially in the night, and the child will seem almost strangled in each fit, the face and neck becoming perfectly livid, till by a violent effort, attended with a hoop, it recovers its breath; the blood will likewise sometimes rush from the nose and mouth; and I have in two or three instances seen the eye-lids as black as if injured by a violent blow, and remain so as long as the cough has continued severe. When taken in time, however, and properly treated, the hooping-cough is rarely fatal, and scarcely ever

but to young infants, and never, as long as the patient is free from fever or other disease.

There is a milder sort of whooping-cough, as there is of every disease, which calls for very little medical assistance; and it is in such cases that matrons and old nurses acquire their credit; but there is no complaint of children with which I am at all acquainted, in which medicine is at times more evidently serviceable, than a bad whooping-cough.

It has also been thought by some practitioners, that little more is required than emetics, and gentle laxatives, in which view it was that the late Dr. James recommended his powder. Others have conceived, that this disorder will run a certain course, according to the degree of its violence, and the age and constitution of the patient; that no medicine tends much to shorten its duration, and that frequent change of air is the most appropriate remedy;* but the fact is that many means are useful, and not unfrequently indispensably necessary, unless we would suffer the patient to be strangled in a fit of coughing, or be otherwise involved in serious or incurable disease.

* This very popular opinion is supported by the authority of Dr. Darwin, and Dr. Heberden, who in his Commentaries on Diseases, p. 435, says, "Experience has instructed us, that a change of air is of singular use in abating the force, and shortening the stay of this distemper." The efficacy of change of air, as a remedy for the whooping-cough, is, however, much more limited, than many persons are willing to believe; and if by the expression "change of air," we are to understand, what many persons consider as synonymous, exposure to the open air, much mischief will often be produced. The whooping-cough is rarely a dangerous disease, unless an attack of inflammation of the lungs supervenes. This, then, is to be carefully guarded against and one of the means of prevention is, to avoid exposure to an intemperate, or cold or bleak air.

I am not acquainted with many, if with any instances, in which the "force of the disease has been abated" by change of air, and should not recommend it for this purpose; but I have often witnessed its usefulness "in shortening the stay of this distemper" *after its force was abated*. I believe that change of air is seldom advisable (unless the patient be placed in a house particularly close and unventilated) during the active state of whooping-cough; but when the violence of the complaint is subdued, it is highly beneficial, particularly if the change be from a cold situation to one of a warmer temperature, or when the coldness of winter, and the bleak east wind of March, is changed to the more genial warmth of spring, and the mild western breezes of April and May. But even then much discretion is required to regulate the time and mode of exposure to the open air, otherwise ill consequences are likely to ensue.—S.M.

It must be apparent, from the above history of the disease, that its various symptoms demand a considerable diversity in the treatment. For all practical purposes, the best division of whooping cough is into a catarrhal and convulsive stage, with occasional complications, the most common of which are bronchitis and pneumonia.

The first thing of importance in the treatment of whooping-cough is a properly regulated temperature; it is only in the warmest weather that it will be prudent to expose the patient to the open air during the first three or four weeks; in cold or damp weather, confinement to warm and dry apartments is absolutely necessary; the air should, however, be only of such a temperature that it may be respired without irritation to the air-passages, and be comfortable to the feelings of the child: overheated apartments produce languor and increase irritability, and therefore render the patient less able to bear the continuance of cough.

If the breathing be difficult, a blister is indicated, and if the child is not very young, it may be kept open for two or three weeks; or, what is sometimes preferable, the repetition of a small one, once in six or eight days; or a plaster of equal parts of the *emplast. lyttæ*; and *emplast. ceræ*. Congestion of the brain arising from pressure upon the large veins of the neck in the violent fits of coughing, is also a circumstance that requires the closest attention. If, therefore, the face should be very livid, and swollen, during the fits of coughing, if any vessel give way, or the patient be plethoric, and more than two or three years old, or should be hot between the paroxysms, a little blood ought to be taken away, and a saline draught be administered every six or eight hours, and the bowels kept open, till the fever shall disappear. Otherwise, if none of these symptoms attend, bleeding does not seem to be indicated, nor much purging.* The loss of blood in this complaint is generally not required, indeed it is to be deprecated; in the pneumonia that occasionally supervenes, it may, however, sometimes be necessary. The cases in which loss of blood is most required, are those in which the brain is congested by

* Yet such a use of some aperient medicine, as shall secure one effectual motion daily, is often beneficial.—S. M.

the severity of the cough, a state that is easily detected by the distention of the veins of the scalp, and suffusion of the eyes. When blood is abstracted under these circumstances, it is better that the quantity should be sufficient to give instant relief: this should be withdrawn either by the leech or by cupping, and care should be taken that the child is on no account weakened by allowing the blood to flow after the leeches are removed.*

There are instances, however, of febrile excitement continuing even in infants, after repeated bleedings by leeches or otherwise, blisters, and the use of various febrifuge remedies; in such cases the constitutional disturbance appears to arise from the state of the bowels, these being either confined, or the stools of a very dark colour, as in adult bilious subjects, and unusually fetid. On this account it is of importance to examine the alvine discharges, whenever a febrile state is kept up, after the use of cooling medicines, bleeding, and other appropriate remedies. Calomel, and repeated aperients, are the appropriate remedies indicated.

[In the early stages of uncomplicated hooping-cough, hydrocyanic acid is a remedy that may be more universally used with advantage than any other; we have but seldom seen a case that has not been much relieved by it; and frequently, indeed in a very large majority of cases, the relief is most marked. H. D.]

In every case, if there be an inclination to vomit, it ought to be encouraged, unless the phlegm be brought up with great ease in almost every fit of coughing, in which case nature seems able to accomplish the business herself, and it will then oftentimes be sufficient to keep the body open by the mildest laxative medicines. But it very rarely happens, unless in infants at the breast, that some kind of emetic is not necessary in the first stage of the complaint. The judicious use of emetics is a matter of great consideration; the selection of the kind of emetic to be used, and the different circumstances under which different forms of emetic are required, must be left to the judgment of the practitioner. Upon the whole, we incline to the use of ipecacuanha, it being safe, and sufficient for all ordinary

* See an excellent paper by Dr. Webster, in Medical Physical Journal, December, 1822.

purposes, the object being from time to time simply to remove the accumulated secretions from the trachea and bronchial tubes. Tartarized antimony, however, has advantages when the air-passages instead of being moist are dry; and particularly should the lungs be involved and the smallest degree of crepitation be present, tartar emetic, followed by small doses of calomel, frequently repeated, will be found invaluable. Should there be no distinct ground for using tartar emetic in preference to ipecacuanha, it should be avoided, as it occasionally happens that the vital powers are alarmingly prostrated by its use.

If the cough should happen to be more violent at any particular time, the emetic should be given a little before the paroxysm is expected. Or perhaps a better method, at least in some cases, and particularly in very young children, is, to give tartarised antimony in small doses, together with a few grains of magnesia, or prepared oyster-shell powder, (according to the state of the bowels,) three or four times a day, so as to keep the stomach in such an irritable state, as shall secure a gentle puking every time the fits of coughing come on. But in whatever way this medicine be directed, it will prove of no service if it do not excite vomiting, and must therefore be given in a dose suitable to the strength of the stomach, which is exceedingly various, not only at different ages, but in children of the same age, and of the same apparent habit of body.

Such a plan is all that will be necessary in the common hooping-cough; but there are many cases which require other means, and demand all the skill of the experienced physician. The cough, for instance, will sometimes increase not only for days, but for weeks together, and the strangulation be exceedingly alarming. In this case, the *lac ammoniaci*, but especially assafœtida, frequently proves a sovereign remedy, and though exceedingly nauseous, many children will take it tolerably well for the short time it appears to be absolutely required; and when they will not, it may be administered by way of a clyster, diffused in a small quantity of pennyroyal, or common water. These medicines, however, will be very improper in the advanced stage of the disease, when attended with hectic heat, hæmorrhage, or other phthisical symptoms; a caution equally

necessary in regard to the bark, which in the absence of these symptoms, and after the stomach and bowels have been well cleansed, is frequently very useful at the latter stage of the disease, when the patient has been exhausted by its long continuance. Upon the same plan with the assafoetida, camphor, and castor, are frequently beneficial, and have the advantage of being less nauseous, but I think proportionately less powerful. I take no notice of tincture of cantharides, though strongly recommended by some writers, because I have had no experience of it myself, and indeed have never found any necessity for trying it. For the like reason I say nothing of arsenic, recommended by Mr. Simmons of Manchester.*

After a long trial I am disposed to attach more importance to alum, as a remedy in hooping cough, than to any other form of tonic or antispasmodic. I have often been surprised at the speed with which it arrests the severe spasmodic fits of coughing; it seems equally applicable to all ages, and almost to all conditions of the patient; I was formerly in the habit of taking much pains to select a certain period of the illness for its administration, and of waiting until the cough had existed at least three weeks, taking care that the bowels were open, the patient free from fever, the air passages perfectly moist, and the disorder free from complication of every kind. A continued observation of the remedy has, however, induced me to be less cautious, and I am disposed to think that a very large amount of collateral annoyances will subside under its use. The fittest state for its administration will be a moist condition of the air passages, and freedom from cerebral congestion, but an opposite condition would not preclude its use should this state not have yielded to other remedies; it generally keeps the bowels in proper order, no aperient being required during its use. The dose for an infant is two grains, three times daily; and to older children four, five, and up to ten and twelve grains may be given, mixed with *syrup. rhæad.* and water; it is seldom disliked.—H. D.]

It will sometimes be of no small service, to rub the hands, and the soles of the feet, with the *spirit. ammoniæ*; *aromat.*

* See Duncan's Annals of Medicine, for 1797.

several times in the day ; or the spine of the back, and the pit of the stomach, with oil of nutmeg, or oil of amber.

Embrocations to the spine, chest, and throat, are extremely useful, from the diversion they produce by counter irritation ; it is also an excellent mode of using sedatives, and some importance may be attached even to the antispasmodic effect of the aromatic oils ; the following form, well applied night and morning, will be found very beneficial :—

R.—Liniment. camphoræ. comp. ℥j. Tinct. opii ℥ij., Ol. succini ℥ij. Liniment. saponis ℥iss. m. Ft. embrocatio.

In some of the long standing cases, when the use of the embrocation has become tiresome to a delicate child, a galbanum plaster to the chest may be substituted.

For the most part no anti-spasmodic is equal to opium, in this, as well as in other diseases. A few drops of laudanum, or if a pill be preferred, two or three grains of the *pil. è styrace*, and to younger children, a small tea-spoonful of syrup of white poppies, taken at bed-time, will not only quiet the cough, and remove the strangulation during its operation, and procure the patient some rest, by which the strength will be recruited, but in many cases seems to have a kindly operation on the disease itself.

[The draught recommended by Dr. Richard Pearson, in the Medico-Chirurgical Transactions, sometimes answers a very good purpose. It may consist of one drop of laudanum, from five to ten drops of ipecacuanha wine, two or three grains of subcarbonate of soda, and a little syrup and water. This dose is suitable for a child upwards of a year old, and is to be repeated two or three times a day.—S. M.]

It is in this way, I doubt not, that the cicuta has gained so much reputation, but, I believe, it is no otherwise a remedy for hooping cough than as an anodyne. From a mistake, however, in this respect, the strong manner in which this medicine has been recommended by Dr. Butter, has certainly done harm ; as I have known people depend solely upon it in very bad cases, to the exclusion of other remedies evidently indicated, which would, at least, have shortened the disease. Joined with emetics and other means, as the symptoms may indicate, it is,

nevertheless, a valuable medicine; and where the form of a pill is, on any account, objected to, may be dissolved in a little water, or syrup. The following will often have a good effect, in children of four or five years of age; acting both as a tonic cordial, and ultimately a sedative.

R.—Olei caryophyl. aromatt. gtt. xxiv. Sacchari purrissimi ꝓiss. Muc. gum. arab. ꝓij. Simul optimè terantur, addendo gradatim, Aq. cinnam. ꝓiss. vel ꝓij. Aq. distil. ꝓiv. Ft. mistura, cujus sumatur cochl. j. largum tussi appropinquante, vel statim post tussim.

If obstructions in the lungs be suspected, blisters should be applied, and recourse had to gentle deobstruent medicines; but at this period the cure is chiefly to be accomplished by perseverance in cooling laxative medicines, by a vegetable and milk diet, (especially asses' milk,) pure air, and gentle exercise.

The cough, after having disappeared for a week or more, is sometimes found to return with great violence, especially upon taking cold; but a gentle purge or two, a vomit, and abstaining from heavy food, generally remove it in a very short time. Should this fail, a grain of assafoetida, taken two, three, or four times a day, (or returning to the use of alum,) according to the age of the child, never fails to check it immediately. If these cautions should be neglected, the cough will oftentimes prove extremely tedious. And in this case I have known the lichen, or ash-coloured ground liver-wort, prove an excellent remedy. One ounce may be boiled in two pints of water to one; and a table-spoonful may be given two or three times a day to infants of a year old: or a like decoction may be made of the oak-lungs, (*lichen pulmonarius*,) or of the *lichen islandicus*. These have had an immediate good effect where infants have appeared to be going fast into an hectic state, after the *cicuta*, *ol. succini*, and *cortex peruv.* have failed, or the disorder has hung on unpleasantly.

A mode of cure of a very different kind has lately been announced by Dr. Struve, of Gorlitz, and may be noticed in this place, as worthy, at least, of a trial in obstinate cases, and in conjunction with other means; though with a caution to young practitioners, in regard to infants and delicate children.

After prescribing an emetic, the following mixture is directed to be rubbed in every two hours, in small quantities, about the region of the stomach.

R.—Antimon. tartarizati ℥j.* Aquæ puræ, ℥ij. Ft. solutio; cui adde. Tinct. cantharid. fort. ℥j. m.

In various instances, the Doctor observes, that a gentle perspiration came on during the night, after the use of this application; that the violence of the cough immediately abated, and in a short time the symptoms totally disappeared.

In the like view of an auxiliary may be noticed the experiments on inhaling the nitrous vapour, made by Mr. Paterson, surgeon to Forton Hospital.

The only thing that remains to be spoken of is the proper diet, which is, indeed, of considerable importance; and for children, even of five or six years of age, ought to be little more than milk and broths, which are easily digested. The objection made by old nurses against milk, that it breeds phlegm, is founded in a gross mistake, that cannot be too frequently controverted. It has, indeed, been sometimes mentioned by a certain class of medical people, but the objection is so truly unphilosophical, and unlike the objections of thinking men, that it scarcely deserves a reply. Should the milk, however, be found to curdle remarkably soon on the stomach, a little common salt, Castile soap, or testaceous powder, may be added to it occasionally, or asses' milk may be substituted for cows'. These light nourishments soon pass out of the stomach, or if brought up by coughing fifty times in the day, (as I have known them to be,) a child of four or five years old will immediately take more of them with avidity; and will be better supplied in this way, (I mean by taking a tea-cupful at a time,) than by making set meals, or taking a large quantity at once. If the child should be thirsty, a little apple-water, toast and water, and other thin drinks, will be pleasant and useful.

[It should nevertheless be borne in mind that though, during the early stages, a diet of broths and milk may be the most desirable, a patient in hooping-cough should not use fluids too

* In Paris's Pharmacologia, the quantity of *antimon. tart.* is stated to be ℥i.—S. M.

largely. The free use of fluids, for any length of time, weakens the stomach and engenders irritability, which is productive of great mischief. Light puddings and boiled fish, with chicken and meat occasionally, will be found more desirable. All acid fruits and acid drinks should be avoided, their use appearing to prevent the dislodgment of the viscid secretion about the throat, which always attends this complaint, a fact which seems to explain the supposed efficacy of the popular remedy of carbonate of potash and cochineal. Patients treated in this way will get through the complaint, if not severe, in a very short time; and where it proves violent, a child will struggle through this long disease, without any considerable loss of strength, or will be very soon recruited by a decoction, or cold infusion of the bark, together with gentle exercise, and country air, the best restoratives after every kind of disease.

In children of a strumous habit it should not be forgotten, that in addition to mere change of air, a residence at the sea side is highly beneficial; and cases will be frequently met with, in which the preparations of steel will be productive of much advantage over bark or any other tonic: should they become necessary, the old steel wine or acetate of iron will be found the best preparations.—H. D.]

TUSSIS SPASMODICA.

Much akin to the former complaint is a troublesome cough, properly enough denominated spasmodic, or convulsive. In a certain state of the air it is sometimes epidemic, and young children, and even infants in the month, are then attacked by it, as well as adults. The irritation seems to be about the larynx, or a very little lower down, and is exceedingly distressing at the time of coughing; but the patient, though an infant, seems immediately afterwards to be quiet and comfortable. This cough is not usually attended with fever, nor other ordinary symptoms of a common cold, nor is it to be relieved by the like means; the cough remaining dry and hoarse under the use of pectoral remedies.

Children of two or three years old may be cured by the

cicuta, and gentle laxative remedies; but the former being less adapted to infants in the month, such may take a few drops of the syrup of white poppies, three or four times a day, and their bowels be carefully kept open; which means seldom fail of removing the complaint in a few days. Should the syrup constipate the bowels, or otherwise disagree, the *sp. ammon. succinat.* may be tried in its stead; which is a good medicine in other dry convulsive coughs, where there is no fever.

I have met with this complaint very frequently in children from two to four years of age, in some of whom it had been of several weeks standing, and after various remedies for coughs had been made trial of. In every instance the complaint has been immediately relieved by the cicuta, and in a week or ten days has been usually removed. The like good effect has attended the infusion of the oak lungs,* after many of the ordinary remedies for coughs have failed; it may very well be administered together with the cicuta, if that should not be soon attended with good effect.

There are, however, some more formidable cases, in which the symptoms are greatly aggravated, and children continue longer in a convalescent state. I have also been called to visit some under all the semblance of approaching death, with profuse sweats, rapid and feeble pulse, and laborious respiration, supposed by able physicians to be sinking fast under peripneumonia notha, or the pleuritis, though with more obscure fever.

Although reduced to this state, under the best conducted antiphlogistic plan, yet has a recourse to the cicuta succeeded equally well, giving immediate relief to all the symptoms. But a degree of dyspnœa, all along merely spasmodic, having, in some cases, still continued, it has been found expedient, after a week or ten days, to have recourse to the bark. At the same time, the violence of the cough, attended with very copious secretion of phlegm, which young children seldom spit up, has required two or three gentle emetics, which have then not failed having a happy effect: though administered previously to the cicuta, I have known them greatly aggravate

* *Lichen Pulmonarius.*

the symptoms, probably, by increasing the debility, and disposition to spasm.

As many practitioners, not very conversant with this complaint under its more aggravated appearances, have been led to consider it as inflammatory, so others, from the continuance and violence of the cough, have expected it to terminate in the hooping-cough, but have been equally mistaken; this being a distinct species of spasm, and never attended with the true hoop.

Mr. Moss speaks of a spasmodic cough, different, he thinks, from any previously described,* and probably an endemic of Liverpool, resembling, however, the humoral asthma of adults (he says) more than any other. It is said to commence a few days after birth, and to continue for several weeks, or sometimes for months; and in either case so commonly proves fatal, especially amongst the lower class of people, that Mr. Moss is at a loss to suggest any appropriate remedy.

If it be truly an endemic, I can probably judge but very imperfectly of it: but from many circumstances in the spasmodic cough described in this chapter, it does not seem unlikely that the cough at Liverpool may be of the same kind. What the former might become, if very long neglected, or improperly treated, or in what time it might prove fatal, I am not prepared to say, having always soon succeeded in its cure by the means I have recommended; which may, possibly, be worthy of a trial at Liverpool, as they will not set aside the little general remedies in use. To these may be added, the use of musk, camphire, Peruvian bark, and quassia, which appear to have been given with success in the spasmodic cough I have described; but whether preferable, in general, to the plan here recommended, time alone can determine.

SUFFOCATIO STRIDULA.

The croup, or acute asthma, is a complaint to which, perhaps, with few exceptions, children only are liable; it has been

* An. 1781.

called, therefore, *asthma infantum spasmodicum*, also *suffocatio stridula*, *cynanche trachealis*, and *esquinancie membraneuse*. It is more probable that it is not contagious; as, besides other negative evidence, it appears that in Chesham poor-house, where there were nearly thirty children, only one had the croup, though it was much in the town at that time, in the years 1793 and 1794.

Though this complaint has for several years infested this country, it has been greatly misunderstood both by writers and practitioners; there being certainly two species of it, perfectly distinct, and requiring very different treatment; the one being acute or inflammatory, the other chronical, or spasmodic. These seem to have been confounded by some authors, and one of them, perhaps, not known to others. Neither of them is often found to attack those who have arrived at the age of ten or twelve years, and according to Dr. Millar, the spasmodic chiefly seizes infants newly weaned, and is then the most severe. The acute croup, however, has appeared in children from within the year, to the fourteenth year. He is, perhaps, the first person in this country who has written particularly on this species; but Dr. Home has treated more distinctly on this complex disease, which had, however, been mentioned by some German writers, and well described by them, long before it was noticed in Britain.

Remote causes of this disorder may, possibly, be the lax fibres of children, the abundance of moist humours natural to them, and the vast secretions from the bronchial vessels; and perhaps the change of food from milk, which is easily assimilated, to one requiring more digestion.

The prophylaxis is the same as in most other diseases peculiar to children. If this complaint arise from the laxity of their solids, (which is certainly not always the case,) the quality of their food, or the natural weakness of their organs of digestion, the general means of prevention, as well as of cure, will be readily indicated. Their food should be such as may be easily digested, and may prove nourishing. A due proportion of milk and broth,* (taken either separately or

* A diet of milk only, even in adults, when long persisted in, though otherwise proper, will create flatulencies.—*Barry, on digestion.*

mixed,) whilst children are very young, or light meats when they become older; good air and exercise, and a careful attention to the state of their bowels.

The proximate cause of the chronical croup is the presence of spasm, however excited; the cause of the inflammatory, is a morbid secretion of a viscid mucus in the trachea, adhering so firmly to its sides as to impede respiration. The quantity and viscosity increasing, gradually lessens the diameter of the part, and if it effect this to a considerable degree, the disease must necessarily prove fatal.

The symptoms of either kind are spasmodic, being such as would be produced by any thing constantly irritating the trachea, or diminishing its diameter. They will therefore very much resemble those of the nervous asthma, but the complaint differs materially from the common spasmodic asthma of adults, in the peculiar croaking noise made in respiration, (from whence it has its name,) and in the violence of the paroxysms; which, however, when the disorder is light, and in its commencement, leave no apparent indisposition, save a certain dulness, and a sense of fear, in children capable of expressing it. The fits, especially in the spasmodic croup, frequently terminate by sneezing, coughing, or vomiting, and return without any regularity. It is attended with a sharp and shrill voice, and a flushed countenance, which grows livid during the paroxysms.

Dr. Millar, who has written largely on this disease, (I apprehend, as it appears in Scotland,) divides it into two principal stages; in the latter of which no method of treatment has appeared to him to be effectual; but medicine is never more efficacious, he thinks, than in the first, if the disorder be not combined with some other, and it be taken in time, though the crouping may be very considerable. This I saw remarkably exemplified in the first instance I met with, which was in a little boy of my own, who was nearly cured in two days. The sovereign remedy he directs is *assafoetida*, which should be administered both by the mouth and in clysters, in doses according to the exigency of the complaint; and where no marked inflammation has taken place, may be given very freely; and afterwards the bark, when the spasms remit.

This account of the disease can, however, apply only to the spasmodic, and is not the disorder usually known in this city by the term croup, but a mere spasmodic complaint, totally unaccompanied with inflammation; at least is so, whenever assafoetida is thus useful in the first instance. And this seems to be further evident from the recovery of such patients, and the consequent want of proof of the existence of that tough membrane found in those whose bodies have been examined after death; in whom the disease is always of short continuance after the croup, or croaking noise in respiration, has taken place. Whereas, the other kind of croup has sometimes been known to continue for two months, and then has yielded to opium. Instances have likewise been met with of children crouping for two or three days, and being then seized with whooping-cough, which has instantly removed the croup: these circumstances seem to prove that species of croup to be truly spasmodic. I have seen it repeatedly in this form attend the cutting of teeth; being then the mere consequence of irritation, as we see cough, and various other symptomatic affections induced at this period. How far Dr. Millar may have mistaken what he calls the two stages of the croup, for two very different species of this complaint, has been hinted already. From my own experience, however, which has been considerable, as well as his authority, it seems very proper that a trial should be given to the assafoetida, when there is no degree of fever, and the child seems little, or no wise indisposed, in the intervals of the crouping. Emetics likewise will sometimes be found necessary,* as will the cicuta and bark; one or other of which must be persevered in, as long as any symptoms of the disease,

* In one instance, medicines of this class were given in such uncommonly large doses, that it may not be amiss to notice them here.

From beginning with one grain of *pulv. antimon.* which was several times repeated, the child (under three years of age) took afterwards a drachm, and two drachms of *vin. antimonii*; then *pulv. ipecacuanha* ℞ss. grs. xv. and ℞j., to which was added gr. j. *antimon. tartarisati*: and at length gr. x. and afterwards ℞j. of *vit. album*. The trial of emetics was then given up for several days; at the expiration of which he took *oxym. scillæ* ℥ij., *vin. antim.* ℥i., which succeeded better than any thing, though it puked him only very moderately; but continued to do so for three or four times that he took it.

and particularly the croaking noise, shall remain. And from the success attending this practice, and a proper discrimination of the disease, (one species being often mistaken for the other,) there may be more room for hope in this cruel disorder, than some practitioners have been induced to think.

But the other species of croup is a most dangerous disorder, being truly inflammatory in the first instance, and is, I believe, always attended with a quick pulse, cough, and laborious breathing very soon after the croaking noise has taken place, and sometimes before it, with a sensible fulness about the forepart of the throat; although at the time of the attack other children have appeared in perfect health.

It does not, however, always seem to be an original disease; being sometimes a consequence of bad fevers, especially the *febris scarlatina*, as well as of some chronical disorders, that have reduced the patient's strength, and is then much more dangerous. But the worst kind frequently appears to arise from the same causes as the malignant sore-throat, only having its seat lower down, and is therefore more severe. And it has, in several instances, accompanied it, as may be known in the early stages of that complaint, by the croaking noise peculiar to the croup; and, I believe, is in such instances generally fatal. It has likewise accompanied the last stage of the putrid thrush, and has then carried off the little sufferer in a few hours. The croup has likewise been found to hang on for several weeks, like the spasmodic croup, without any alarming symptom, and has even disappeared, and suddenly recurring, has ended very fatally in a very few days, before the child has seemed to be in danger, and after eating a hearty meal. An instance of this kind, with the appearances on dissection proving the nature of the complaint, is given by Dr. Edlin, of Uxbridge, in the *Medical Review and Magazine* for June 1800.

On the means of cure for this species very few directions will be necessary; the disease (except in rare instances) being always short, and the treatment very evident. Bleeding is always necessary, if the physician be called at the commencement of the disease, or stridulous noise; and if the patient be visited too late to endure this evacuation, I believe no hope

can remain of his being benefited without it, unless the infant be very young; which, however, in another view, cannot but add to the danger. If the patient be three or four years old, and plethoric, a pretty copious bleeding by the lancet may be the preferable mode; but if much younger, or of a delicate habit, four, six, or even more leeches should be immediately applied to the throat,* especially if there be any perceptible fulness of that part, and a blister applied to the nape of the neck. The patient may likewise breathe the vapour of warm water with vinegar in it, or an embrocation may be constantly applied, by compresses of linen, to the fore parts of the throat. After the leeches and blisters, a vomit should be administered, and the sickness kept up for several hours, or even days, by small doses of the antimonial powder; which will generally succeed if had recourse to within six or eight hours of the commencement of the disease. If the bleeding, whether topical or general, should afford no relief, or if after an evident amendment, any exacerbation come on, leeches should be applied to the throat, and the vomiting kept up. At the close of the complaint, and to prevent a relapse, the bark proves highly serviceable, and will also restore the strength of the patient.

In the fifth volume of the *Memoirs of the Medical Society*, are some good practical observations on this disease, by Mr. Field. He prefers general to topical bleeding, when called early in the disease; advises the body to be kept open, but dissuades from great evacuations by stool; objects to blisters to the throat; but recommends the following embrocation.

R. *Liquor ammoniæ acetat.* ʒij; *Sp. æther. sulph. comp.* ʒi; or for very young children, equal parts of these, and of water.

He thinks he has reason to conclude the disorder to be contagious; but as he has not mentioned the ground of his sus-

* In this case, as in many others, the application of cupping glasses appears to me decidedly preferable to leeches. The quantity of blood removed is accurately ascertained, and is obtained in a much shorter space of time; both of which are very important advantages.—S. M.

picion, the opposite presumption, from the accounts from Ches-ham, is the more probable one.

The French writers likewise depend much upon emetics, and afterwards lenient purges, and, to prevent a return, advise aperatives, stomachics, and tonics, particularly preparations of steel, and natural chalybeate waters.

In the kingdom of Ireland, particularly about Mulligar, in the county of Westmeath, where are many lakes, the croup is a very common complaint, and equally inflammatory and dangerous as amongst us. It is likewise apt to return, (though seldom so violently as in the first instance,) if the patient ventures abroad too soon, and is exposed to the bad air of that quarter. The method of treatment there is somewhat different from ours, blood being immediately drawn from the foot, instead of the throat or arm, and often in a large quantity, the child being placed, at the time, in a warm bath; a blister is then applied between the shoulders, and the bowels are kept open, chiefly by clysters. Emetics are not had recourse to, nor, indeed, any means but the above; for unless the violence of the complaint abates very soon, the child is thought to be past recovery. The complaint is, possibly, not perfectly understood in this quarter, and in the northern parts of that kingdom neither this species, nor the chronical croup, is at all known, according to my information.

In North America, a very different mode of treatment has been adopted; calomel being recommended as a most successful remedy, after bleeding and the application of blisters, (when peripneumonic symptoms attend,) and the ordinary remedies of emetics and purges. Dr. Rush, of Philadelphia, is so sanguine in regard to it, as to assert, that the bark is scarcely a more certain remedy for intermittents, than calomel, when thus administered, is in this species of cynanche.

In a former edition I merely announced the sentiments of Dr. Rush, having then had no opportunity of making trial of calomel, his observations having but just come to hand. Since that time, however, I have made trial of calomel with success, though I do not feel myself warranted to speak of it in the

strong terms that Dr. Rush and some others have adopted. Together with calomel, I have found it necessary to have recourse also to emetics and repeated bleeding with leeches, even in young infants; the former being administered frequently, so as to keep an infant throwing up as often as it crouped throughout the day. Mr. Anderson, senior, of Edinburgh, testifies to the merit of this medicine, after other means had failed, and the patients' lives been despaired of: other accounts, however, by Dr. Rumsey, of Chesham, are far less favourable; the exhibition of calomel, together with emetics and other remedies, failing of success in ten cases out of nineteen, and the disease being evidently less severe in the nine which terminated favourably. But Dr. Hamilton speaks equally in favour of calomel, given in frequent and large doses, until the breathing be relieved, and then to be immediately abated: this, together with the warm bath, with which he always begins, having succeeded in almost every instance. Upon the whole, every reader, from these statements, and his own experience, will judge for himself: the author, from his own, has no doubt but that calomel will be highly useful, while bleeding, the warm bath, repeated emetics, and a blister to the throat, are very essentially necessary.

In Dr. Ferriar's Medical Histories and Reflections, vol. iii., there are likewise some very good observations on this disease; which he also has very properly divided into the acute and spurious. In the former he remarks certain precurrent symptoms whereby this dangerous disease may be foreseen; but I am satisfied this is not always the case: though much deference is due to his great attention to this sad disorder, and the very considerable experience he has had. The treatment recommended is very agreeable to that I have laid down; but with the addition of one remark, very worthy of attention, viz., that the venesection should be very copious, and nearly *ad deliquium*.

Some years ago, Dr. John Archer, of Harford county, Maryland, in America, strongly recommended the seneka-root, (*Polygala Senega*. Linn.) as an almost infallible remedy in this disease; I shall therefore present the reader with the

doctor's account in his own words, in a letter he wrote to Dr. Barton, of Pennsylvania College.

"I have in a great many instances, found a decoction of the *Seneka* the most powerful medicine in the cure of this disease, and I am happy to tell you, that I believe it may be depended on. I make a strong decoction of the root in the following manner, viz., half an ounce of the seneka in coarse powder, is boiled in eight ounces of water, down to four. Of this I give a tea-spoonful every half hour, or hour, as the urgency of the symptoms may require; and at intervals a few drops, to keep up the stimulus, until it either acts as an emetic or cathartic. I then repeat it, in smaller quantities, so as to preserve the stimulus of the seneka constantly in the mouth and throat.

"If the disease be more advanced, and the breathing more difficult, with a peculiar harsh or shrill sound, like air forcibly drawn through a small aperture; attended with a retraction of the upper part of the abdomen under the cartilages of the ribs; I then give calomel freely and frequently, and rub mercurial ointment on the throat, and contiguous parts, so as to affect the glands of the throat and mouth as quickly as possible. This I do that the mercury may co-operate with the action of the seneka, and thereby hasten the separation of the membranous substance formed in the trachea.

"In this method I have succeeded in the cure of croup, even beyond my most sanguine expectations."

Having never made trial of the seneka in this disease, (though I have found it very useful in the latter stage of pleurisy,) I have only to remark upon it, that I am informed it has been successful in this country, in one or more very bad cases, and seems to be very similar to the repeated doses of emetic tartar that have been recommended in this chapter; while the exhibition of calomel and mercurial ointment accord with the application of blisters. Which of these means may be the more successful, or how far the application of leeches, at the commencement of the disease, may be safely dispensed with, actual experiment only can determine.

Instances of success likewise with the *tinct. digitalis*, (as directed by Dr. Maclean) have been twice announced by Mr.

Custance, of Kidderminster. The last was in a child of two years of age, to whom gtt. vi. were administered every six hours. A great recommendation of this medicine is, that it succeeded in all the three cases; which were the only ones in which Mr. Custance had an opportunity of trying it.*

I have examined the trachea after death in only three patients, in two of which I found the precise appearances described by Dr. Millar and others: the wind-pipe being lined with a tough viscid coat, so as mechanically to close up the passage. The third instance was in an infant who died suddenly of hydrocephalus, a few days after appearing to be recovered from the croup. Sometimes the adventitious membrane is not formed at all; the inner surface of the trachea is merely reddened and tumid, and covered with viscid mucus, or with patches of concrete albumen here and there.

[The croup is a disease so frequently fatal, that an acquaintance with its earliest symptoms is of the utmost importance to enable us, if possible, to ward off its approach. The precursory signs or stage of formation are often so slight as not to cause alarm. They may be described as common catarrh, accompanied by a short cough, hoarseness, coryza, sometimes moroseness, with alternate heats and chills, restless nights, and occasional application of the hand to the throat. After the above symptoms have existed for a few days, or at other times where they have not occurred at all, the second stage comes on, characterized by difficult sonorous respiration, with a peculiar, dry, loud, ringing cough, the sound of which conveys the idea of air passing through a metallic tube, or the loud crowing of a roopy cock.

The croupy cough, though difficult to describe, is readily recognized after being once heard; the cough, or expiration, is followed by a slow, sonorous, hissing inspiration; the expiration between the cough is more easy than inspiration, but is always hurried. There is hoarseness, a gruff voice, sometimes a total loss of the power of speech; the pulse is frequent and hard, and the skin hot; the paroxysms of cough seem to recur with redoubled violence, the whole frame is agitated to an

* Medical and Physical Journal, vol. iv.

extreme degree, the face is flushed, and sometimes covered with perspiration, the eyes are protruded and watery; there is a convulsive struggle to renew the respiration at the termination of each fit. There is no expectoration at this period of the disease. At first there are almost invariably remissions during the day; but at night, after falling asleep, the difficulty of respiration, sense of suffocation, anxiety, and distress, are increased. The croup creeps on insidiously, or makes its attack suddenly and unexpectedly after the child has been asleep for some hours. It is almost invariably observed, that the paroxysm usually occurs at midnight. In the third stage, as the obstruction to the passage of the air increases, the blood ceases to be duly arterialized, the skin becomes dusky, the pulse feeble and irregular, and the extremities cold. The cough, also, as the disease thus goes on from bad to worse, ceases to be loud and clanging, becomes husky, and inaudible at a short distance, and the voice sinks into a whisper; the head is thrown back, and the nostrils, in perpetual motion, dilate widely; the face is pale, or of a leaden hue, and sometimes puffed; the eyes become sunk and filmy, the pupils often expand, the feet and hands swell, the child tosses its arms about, and now and then seizes the throat as if to move the obstacle to respiration; drowsiness supervenes, the breathing becomes gasping, interrupted, and convulsive, and the child dies after an inspiration.

The disease may be prolonged from five to fifteen days; when it extends to the larynx it is usually more rapid, and terminates fatally; when the symptoms are subdued, but not removed, and it passes down the bronchi, it approaches the chronic character, and will then present the features of the most severe bronchitis.

The croup is exceedingly apt to recur: after a few days apparent recovery, relapses may take place, and these are very perilous. While writing this paper I was called to a child a short distance from town; the day following I was informed that it was much better, and subsequently that it was well. Eight days from the first visit I was again hastily summoned; the child lay, tossing about its hands, and gasping

for breath, with a very feeble, frequent, and intermitting pulse; in a feeble voice it asked for drink occasionally, of which it sipped; the skin was cool and clammy, the eyes sunk in, and suffused with film; it died during the night, notwithstanding every exertion that was made to save it. It was under the care of a most intelligent practitioner, who was conversant from experience with the disease.

Besides this tendency to a renewal of the severe symptoms, the little patients are often affected with cough and hoarseness, and sometimes with aphonia, for a long time; and while these relics of the malady remain, the least inattention may bring them back again.

The prognosis should always be guarded. We must be guided by the apparent circumstances and progress of the malady. If the distress of breathing seems to remit, and the expectoration becomes free before the strength is greatly decreased, there is some hope; if, on the other hand, the lips are livid, the skin cold and clammy, the pulse feeble, frequent, and intermitting, or scarcely perceptible, and these symptoms are accompanied by tossing about of the hands, and a drowsy and comatose state, the case is hopeless.

Treatment.—First of the preventive: there is no one symptom that can with certainty be relied on as indicating the approach of croup; nevertheless as hoarseness does not usually prevail in the common catarrh of young children, where catarrh is accompanied by hoarseness, it is better not to trust too much to the discriminating power of the ear to ascertain its nature, but to proceed at once on the supposition that it may be of a dangerous kind, and give the child an emetic and active purgative. A full dose of the *hydrargyri chloridum* with one-third of a grain of *antimonii potassio-tartras*, and within an hour or two after a dose of the compound senna mixture, or *pulvis jalapæ co.* or *scammonii comp.* may answer the purpose. If the child be kept on a light diet, and in a warm, dry atmosphere for a few days, or until the hoarseness disappears, the disease may by these means be averted.

Should there be no precursory symptom, much will depend on the early and vigorous treatment of the disease; and here

the observant eye and sensitive ear of an intelligent and watchful parent will frequently detect the first crouping of a child at midnight, although in a different apartment, while the nurses are fast asleep.

The indications of cure are, 1st, the employment of those means applicable to the treatment of inflammation generally, adapting them to the particular circumstances of the malady; 2dly. to relieve the spasmodic symptoms as they appear; 3dly, to support the powers of life in the latter stage, to enable the system to throw off the matters exuded in the trachea.

Immediately on the attack the child should be bled; in younger children by cupping from the sternum, or between the shoulders, or by the application of leeches on the sternum; in older or robust children, bleeding from the arm may be preferable. To a child of a year old, one ounce and a half of blood, or four leeches, will be a fair proportion, and for every additional year one ounce of blood more may be taken, or two leeches applied. The abstraction should be followed by an emetic of *antimonii potasso-tartras* dissolved in water; one-third of a grain may be given every ten minutes till efficient vomiting is excited. The loss of blood facilitates the operation of the emetic, and lessens the risk of injurious congestion of the vessels of the head during the straining efforts of vomiting. After this the child is to be immersed in a warm bath, (at 96 of Fahrenheit,) or it may be wrapped up in a blanket wrung out of hot water. Whether the bath or blanket be employed, it ought to be continued for at least ten minutes; and then the child should be rubbed dry, wrapped up in warm flannel, and put to bed. Immediately after this a dose of calomel, gr. ii. (to a child in the second year, adding gr. i. for each additional year) is to be given every hour, or every two or three hours, till the breathing is relieved, when it is to be given in gradually less frequent doses.

This medicine generally causes both vomiting and purging. Some eminent practitioners advise it to be combined with *pulvis jacobii*, or the *antimonii potassio-tartras*. Should purging not be produced, a dose of *ol. ricini* should be given, and an enema be administered; the first alleviation of symptoms

generally follows the discharge of a great quantity of dark green coloured matter (like boiled spinach) by stool, and now the calomel is to be discontinued. Should, however, the symptoms not be alleviated, or if the croup is relieved, and dyspnœa is urgent, indicating bronchitis,—if the patient is not exhausted, a few more leeches may be applied, and the emetic be repeated, even a third or fourth time, if necessary, and this may be followed by the application of a blister across the sternum. If notwithstanding the judicious use of the foregoing means, we should infer the formation of a false membrane, we should assist the operations of nature in detaching it. For this purpose medicines which have usually the effect of rendering more fluid the mucous secretions of the air-passages may be given; but care should be taken not to give expectorants until depletion has been carried sufficiently far. The *decoctum senegæ*, with *oxymel scillæ* and *vin. ipecac.* have been found useful, and the inhalation of watery and medicated vapours.

In the latter stage, when the child is cold and sinking, wine whey and ammonia, with moderate doses of *tinct. opii*, may be given, and cataplasms should be applied to the calves of the legs and feet. Children have sometimes recovered from the most hopeless condition, and therefore we should be encouraged to persevere in our efforts to the last.

[It has been recommended, if an energetic trial of other remedies does not stop the progress of the disease, to perform the operation of tracheotomy, and some instances have occurred in which the patient's life has been preserved by this operation. In a case which I attended with Mr. Lightfoot, this operation was proposed as a last and only remedy; it was performed by the late Mr. Chevalier, and was completely successful. The particulars are detailed in the sixth volume of the Medico-Chirurgical Transactions. A successful case is also mentioned in the third volume of the same.—S. M.]

[The diet during the treatment should be strictly antiphlogistic, and consist of barley water, tea, toast and water, and rennet whey. The temperature of the apartment should be kept moderately warm, and a little humid, by the evaporation

of water. When the disease subsides a more nutritious diet should be gradually allowed. In some cases considerable weakness remains after the crouping has ceased; this is partly attributable to the violence of the disease, and partly to the effects of the treatment; here some cordial, as wine, may be allowed, and some light tonic medicine should be given.—H. D.]

RACHITIS, OR RICKETS.

This is comparatively a late disorder in Europe; Astruc observes that England is said to be the part in which it first made its appearance, and that it was then described by Glisson and Mayhow; but he thinks it probable, that it appeared at the same time over all Europe, through the coldness of the weather. It was named Rachitis, from the Greek, implying that the spina dorsi is particularly affected by it;* though it rarely attacks the spine till the disorder is far advanced.

It was first noticed in the western part of England,† about the year 1628,‡ and is said to have taken place upon the increase of manufactures, when people left the villages and husbandry, to settle in large manufacturing towns; where they wanted that exercise, and pure air, which they had enjoyed in their former situation and employments.

This is a pertinent observation to have been made at that time, and accords with late experience and facts; manufacturing towns, abounding with this disease above all others, especially among the poor. It may, therefore, frequently arise from unhealthy parents, especially from mothers who pass too sedentary a life in a bad air, and feed upon a

* From this circumstance, it has been supposed to have been known in the time of Hippocrates; but his remark (*Aphor.* § 3. 26) is certainly too concise to establish the point; as it is simply observed, that among other complaints, infants, after the period of dentition, are liable to *παρισθμα σπονδυλου του κατα το λυιον εισω ωσις*. In *Mons. Le Febvre de Villebrune's* Greek edition of the *Aphorisms*, there are, however, some observations tending to evince, that this disease is of an older date, by some centuries, than it has been generally imagined; and this, from the nature of the disease, is not unlikely.

† See Glisson.

‡ Prinrose.

weak and watery diet; from children's food being weak, watery, or too viscid to be properly digested; but above all, perhaps, from bad nursing, and children being left wet, dirty, or exposed to a cold, moist air,* without sufficient covering; from want of proper exercise, and from close and crowded apartments. On this account, children of poor people are particularly liable to this disorder: parents and governors of workhouses, charity schools, &c. ought therefore carefully to guard against the last-mentioned causes. Or lastly, from the habit of body being reduced by the long continuance of almost any of the complaints hitherto considered. From these sources arise what may be termed its proximate causes: such are, a load of undigested juices in the stomach, intestines, and all the first passages; an universal viscosity in the extreme vessels, especially of the joints; a corrosive acrimony from a too languid circulation, and a general obstruction in the fibres of the muscles.

The usual symptoms of rickets are soft flesh; bloated, or a very florid countenance; weakness; dislike to motion; with enlargement of the belly, head, and joints. The wrists and ankles enlarge first, afterwards the back and breast bones; and, indeed, all the bones swell and become soft, especially the more spongy ones. The pulse is quick and feeble, and the appetite and digestion usually bad. Teething is commonly late, though not frequently difficult, but the teeth often rot early, and fall out. Great acuteness of mind has been observed in this, and some other chronical complaints. It seldom attacks children before they are six months old, or above two years; the reasons for which are obvious.

The distinctive character of rickets is softness of the bones, in consequence of a deficiency of earthy matter in them; hence they do not possess the natural and requisite firmness; they therefore bend in different directions, in proportion to their

* From the experiments made by Dr. Beddoes, Withering, and others, upon atmospheric air, and its relation to diseases, it cannot be at all surprising, that this disorder, particularly, should often be owing to foul air, in which what has been lately termed the azote, is too predominant. And it is worthy of remark, that this complaint is scarcely known in very hot climates.

weakness and the weight imposed upon them. "Dr. John Davy found 100 parts of the dry tibia of a healthy subject of fifteen, to yield 46.4 of animal matter, and 53.6 of earthy; while the same quantity of the dry tibia of a rickety child contained 74 parts of animal, and 26 of earthy substance."

As the disease advances, the pelvis and spine become deformed, which may eventually proceed to such an extent as to destroy life, by interrupting the performance of the functions of the different viscera. When a female child becomes affected with rickets, such a degree of deformity may soon be induced as will render her incapable of ever bearing a living child—hence arises the great necessity of early attention to this disease in females; otherwise its effects may lead to the destruction of many children, and repeatedly endanger the life of the mother.

The disease originates, for the most part, from the causes beforementioned, and generally in connexion with evidence of a scrofulous diathesis.

As it appears to arise from a general weakness and relaxation,* the indications of cure are to brace and strengthen the solids, and to promote digestion, and the formation of good chyle. These ends will be promoted by wholesome and dry food, suited to the age; good bread, or biscuit; and roasted meats, rather than boiled, with a little red port wine. Should the child be too young to eat flesh meats, its diet ought to be chiefly of broths, milk, rice, millet, pearl-barley, salep, and semolina, with spices, if it be not inclined to be feverish. This, however, is sometimes the case in older children, though perhaps too rarely suspected, and requires in that stage of the disease a very opposite treatment; even small bleedings being then found serviceable. The child must above all have good nursing, and especially exercise and air, without being kept very hot or very cold; unless a strict

* Mons. Bonhomme, of Paris, has formed a different and strange theory of the nature of this disease; and recommends very strongly the internal exhibition of phosphate of lime and phosphate of soda, together with an external washing with an alkaline liquid made by dissolving an ounce of common potash, or *sal tartari*, in a pound of very pure spring water.

attention be paid to these, medicine can be of but little service. If the child be too young to exercise itself by walking and such like, the nurse, besides affording it every exercise it can bear, may induce the infant to exert itself to no small advantage, by the following easy means. She has only to dash a few drops of water suddenly in its face several times a day, in a manner often done to recover people from a swoon, though less violently. This will oblige the infant to put almost every muscle into action, by which the blood will be forced through the minute vessels, and many of the advantages of exercise produced, and in a more powerful manner. To the same end, linen cloths wetted with cold water, with the addition of a little spirit of any kind, may be applied to the arms and legs, or to the spine, every time the child is dressed or undressed, especially if the bones of these parts are become enlarged or distorted by the disease. The parts should afterwards be rubbed very dry with a piece of warm flannel.

If the child be of a gross habit, the eighth part, or a quarter of a grain of ipecacuanha, taken once or twice a day: gentle pukes, and very brisk purges, especially of the *pulv. è scammonio cum calomel.* prove of use. The *tinct. aloës comp.* is also a good medicine, a few drops once or more in a day, (as may suit the state of the bowels) taken on a bit of sugar, or otherwise. In such habits, all foundation of a cure must be laid in reducing the belly to its proper size, and in strengthening the stomach. If the child be rather delicate, the cold bath is often of more service than anything else; but this should not be entered upon in winter, nor without previous purging. While the belly remains enlarged, hard, and tense, tepid bathing, in water impregnated with salt, is a much more useful remedy. Frictions afterwards with flannel and aromatic powders, or the fumes of frankincense, mastic, or amber, especially on the back and belly, will further tend to strengthen the habit.

Besides such means, the cold infusion of bark, and other bitters, especially columba; or small doses *flor. martial. tinc-*

tura myrrhæ, or the *vinum ferri*, have often the best effect. Dr. Temple prefers the following form above any other:—

R.—Ferri. sexquioxidi, gr. iv. Pulv. rhei gr. iii. Sacch. albi. gr. x. Misce. Ft. pulvis, mane et vespere sumendus quotidie.

The rhubarb should be increased or diminished, as may be necessary; two stools a day being sufficient.—The following is likewise from him:—

R.—Zinci oxydi. gr. ij. Testæ præparatæ, ʒj. Pulv. aromat. gr. xij. Sacch. alb. ʒj. Misce et divid. in chart. vi. quarum capiat unam nocte et mane quotidie. The sesquioxide of iron, and the zinc, are to be gradually increased.

In the early stages of this disease the treatment recommended for remittent fever will be most appropriate, and subsequently the various preparations of iron may be given alone, or in combination with iodine. Under other circumstances, as where the bowels are affected, combined with the alkalies or alkaline earths, as *liq. potassæ* or *testæ pp*; or where languor prevails, the volatile alkali will be preferable. Above all, free exposure to the air in the country, or on the sea-coast, should be enjoined; indeed, the child should live in the air, when the weather will permit. When carried in the arms of a nurse, its position should be frequently changed. When in bed, it should be so placed with regard to the various objects around, as not to incline to one side more than the other; it should never be allowed to remain any length of time in the sitting posture; and when able to walk, or take exercise, it should never do so to the extent of fatigue, and always observing the recumbent posture afterwards on a firm sofa, with the head moderately elevated, varying the position from the back to either side. The tepid salt and water or cold bath should be taken every morning, and the surface of the body be well dried and rubbed afterwards. The surface of the body is to be well rubbed again at night with the hand and powdered starch to prevent abrasion of the skin; as the bones acquire firmness, attempts should be made to restore them to their natural shape by well-directed manipulations, and in some

instances by the employment of such mechanical contrivances as will give support without injurious confinement.

We believe that an instrument made on the principle of Salmon and Ody's self-adjusting truss, with a spring of moderate power, well rounded, and not coming in contact with the side of the thorax, firm but moderate pressure being thus made by pads placed on the spine and sternum, worn a portion of the day, the patient being placed in the recumbent posture, the sides of the thorax being well rubbed alternately during the time, thus causing increased muscular development, would tend greatly to relieve the projecting sternum. After the cessation of the disease, the bones acquire a degree of solidity and strength greater than natural; and many persons whose form proves that they were rickety in early years, are in after life distinguished for robustness and activity. The deficiency of earthy salts in the bones, which existed during rickets, is succeeded by their excessive deposition; and that state is induced which is named hyperostosis. In some instances rickets have been followed, after an interval, by the production of bony growths.

It has been before remarked, that under every plan, a good diet, air, and exercise, especially riding on horseback, are of the utmost consequence; which, if duly persevered in, and the state of the stomach and bowels properly attended to, will often effect wonders. A cure, therefore, should not be despaired of under any circumstances, provided the internal and vital parts are not diseased. Besides, this is one of those chronical complaints which seem to be gotten the better of by time, and wears itself out, as it were, and to which the above-mentioned means will greatly contribute.—*Sæpe pertinacia juvant, malum corporis vincit.*—(*Celsus.*)

SCROFULA.

This is primarily a glandular disease, though in its progress it attacks the adipose membrane, the eyes, the muscles, tendons, and even the bones themselves, especially the joints.*

* From this propensity to spread, the disorder is said to have taken its name.

Such, at least, has been the general opinion, though from later investigations there is reason to imagine that it originates in the cellular membrane. It seldom makes its appearance before two years of age, nor later than ten or twelve, unless it be in regard to affections of the eyes, though there are more exceptions in respect to the latter period; and it then often proves fatal, by falling on the larger joints, the lungs, or other noble part. It is frequently observed to follow other disorders, particularly the small-pox, whether taken naturally or from inoculation; also the whooping-cough, measles, teething, rickets, and many other disorders already mentioned. Hence, the nature of this disease is better understood, as it so often falls upon weak and tender habits, either originally of a lax fibre, or worn out by previous diseases; or is gradually brought on by a heavy, indigestible, and bad diet, or a low, wet, and unhealthy situation. It is, however, sometimes found to be hereditary, but will very frequently lie dormant for two or three generations, (resisted sometimes by intermarriage in a healthy family) and afterwards appear with redoubled violence: as well as affect the greater part of a family very much, while the rest shall be entirely free from it. It is often attended, or rather preceded, by a peculiar look about the eyes, which are generally large, and a thickness of the upper lip; and sometimes proves a source of ill health through life, but is not usually fatal in the first instance. Long before the external glands become affected, especially in young subjects, the belly is sometimes observed to be hard and enlarged; and after death, the mesenteric glands, the lungs, and even the pancreas have been found diseased.

This is always a peculiarly unpleasant complaint, and frequently does not admit of so much relief by medicines, as many other disorders, yet it oftentimes disappears at the time of puberty, (and sometimes sooner) especially in fe-

“*Strumæ, vel scrofulæ, sic dicuntur quia frequenter in scrofis, id est, suis, in collo fiunt; vel a multiplici partu, quoniam sicut suæ multos edunt partus, sic in scrofulis ex una post modum fiunt plures.*”—(*Tractatus de Morbis Puerorum, Amstelodami, 1760.*) The struma is, nevertheless, a complaint as different from scrofula, as it is from the bronchocele, and is chiefly endemial.

males; but whether this be owing to the increased strength of the solids, or to other changes in the habit, naturally happening at that period, is not an inquiry proper for this place. On the other hand, after disappearing for several years, during which perfect health has been enjoyed, the humour has unexpectedly fallen upon some internal glandular part, frequently the mesentery, occasioning various pains and complaints, often attributed to other causes, and has undermined the constitution; producing ultimately pulmonary consumption, or a fatal marasmus.

Although I thought it very necessary to mention this disease, amongst others to which the state of childhood is liable, I am sensible how difficult it would be to point out anything like a general and adequate remedy. At its first appearance, however, bitter, or mercurial purges, are sometimes of use, as are antimonial vomits; and frequently burnt sponge, and saponaceous medicines, warmed with spices, and continued for a length of time; though it should be observed, that this disorder, like the preceding, sometimes occurs in patients of a somewhat plethoric habit, and may, for a while, demand the interposition of certain antiphlogistic remedies. But when the disease is confirmed, lime water, and decoctions of the woods, together with crude antimony, kermes mineral, *sulphur aurat. antimonii*, bark, and steel, with wine, and a generous diet, are, I believe, most to be depended upon as internal remedies; from some of which, I have seen no inconsiderable cures effected. As externals, the following has been found useful: ox-gall, with camphor, *unguent. hydrargyri*, *empl. hyd. c. cicuta*, *liniment. ammoniæ*, and fomentations with cicuta. But in this, as in other chronic complaints, good air and exercise are of the greatest importance. Indeed, the advantage of exercise in this disease is so great, that I wish to lay a very great stress on it. But then it must be daily had recourse to, and by degrees be so considerable, as to render the patient every night sensibly fatigued. Thus I have known riding behind a carriage, almost without the aid of any medicine, entirely remove the complaint.

When there are external tumours, I am satisfied that the

opinion I have already given to the public, in a larger tract on this complaint,* is both rational and safe; and that whenever they are at all disposed to come forward, and are not seated on improper parts, they ought to be brought to as speedy a suppuration as is possible. To this end, an epithem of honey, flour, and yoke of egg, should be applied twice a day, and the parts be electrified. The scrofulous virus, when thrown on the surface, so far resembles the cancerous, according to the description of the late ingenious Mr. Hunter, that it is inclined to spread to a considerable extent; but as tumours of the former class will bear rougher treatment than the latter, I am confident that much benefit may arise from the use of external stimulants, by stopping the progress of the disorder in the neighbouring parts, as well as by invigorating them, and thereby disposing the ulcers to heal. Of this kind are fumigations of *hydrargyrus sulphuratus ruber*, and *hydrarg. cum sulphure*. Also, light frictions with mercury, so as to make it pass freely through the lymphatics of the distempered parts, without affecting the system, have in course of time been beneficial, and deserve to be brought into more general practice than they have hitherto been.

Under such a plan, it will be very necessary that the body be kept open; and to this end, one drachm or more of the *sal. cathartic.* may be dissolved in a pint of water, and taken every day as common drink. This quantity of salt will give very little taste to the water, and, in some instances, has alone had a good effect in this dreadful complaint, especially in stronger children, and such as are otherwise healthy. On the other hand, children of a delicate and spare habit are more likely to be benefited by the tonic remedies before mentioned, and such as warm and invigorate the system; of which class one lately recommended in France has been found exceedingly useful, and of which I shall here subjoin the form in which I have generally employed it.

R.—Ammoniæ ppt. ʒij. Rad. Gentianæ incis. ʒj. Affunde spir. vini gallici ʒxij. Fiat tinctura.—Sumat æger cochl. infantum ad cochleare largum ex aquæ puræ q.s. ter, quaterve in die.

* See the Author's Surgical Tracts.

I have had further reason to be confirmed in the above opinion respecting stimuli, from observations communicated to me by Mr. Partington, who, since the hints I threw out in the aforementioned work, has made use of electricity with very good effects, in these, as well as other cold tumours and ulcers I had mentioned, which have all healed very kindly, or been dispersed in a reasonable time, in consequence of this stimulus to the parts. When scrofulous ulcers have been healed, and only some small tumours remain, I have experienced very good effects from the external use of as strong a solution of camphor in oil of almonds as can be made, which has dispersed them very soon; and it has been found a very successful remedy in the cure of the incipient bronchocele, though enlarged to the size of a turkey's egg, and requires only to be very well rubbed into the parts, three times a day. The patient should at the same time take a drachm or two of the tartarised natron every morning.

Tobacco has also been lately very strongly recommended, in a treatise on this disease, by Dr. C. W. Hufeland, of Jena, author of "A Treatise on the Art of prolonging Life." Readers may consult the former work with considerable profit, as it contains a fuller investigation of the disease, and a better selection and adaptation of remedies, than has ever fallen under the author's reading.

An obvious discrimination should be made in regard to tumours about the neck, so frequently the early seat of this disease; since many of them are of a harmless nature, or even salutary, the consequence of a slight feverish disposition, or of some little cold from a sudden stroke of air on the neck. These, it is well known, rise suddenly, become painful, and increasing daily in size, either very soon put on the usual appearance of suppuration, or begin to subside; and whether they break or not, are no indication of any thing materially wrong in the habit. On the contrary, scrofulous tumours always rise slowly, unless in very young infants, and immediately after the small-pox; often continue a long time at a stand, and sometimes are not only months, but even some

years, before they suppurate; and then with very little pain, or true inflammation. For such, particularly when very large, as well as indolent, embracing a large part of the neck, the white lily root, with an equal quantity of bread made into a poultice with milk, has been followed with a good effect, the tumour subsiding entirely in the course of a few weeks.

I shall only add further on the head of scrofula, what is very well known, that sea-bathing alone sometimes effects a perfect cure; and, perhaps, in tepid water oftener than in its natural state. Should the child, therefore, have several scrofulous tumours, or the habit be much affected, trial should be made of the sea, and the tumours will, perhaps, be dispersed by the sea bathing; but this need not interfere with any other treatment of the tumours, should any other treatment be thought necessary.

[Living in a dry, warm atmosphere, and as much in the open air as possible, and on the sea coast, in preference to inland situations, using cold or warm sea bathing, as the constitution is best able to bear, with a plentiful and nutritious diet, and warm clothing in cold weather, are the most important means of cure. The bowels should be kept duly regulated, and perhaps alterative mercurials are the most appropriate, as the *hydrarg. cum. creta*, or *hydrarg. chloridum*, in combination with *pulv. rhæi*. With these bitter vegetable infusions should be administered, in combination with alkalies, and alternated with preparations of iron, of which the *vinum ferri* is one of the best. Preparations of iodine are useful, but should be given in moderate doses, or its tonic and specific effects are superseded by its more irritating or poisonous qualities; or the iron and iodine may be given in combination, as in the iodide of iron, of which the syrup is a good form for children. Sir B. Brodie says the *vin. ferri* should be given every alternate month for three or four years, even although the case should be happily cured in six months. The cod liver oil has of late years been much extolled in the treatment of scrofulous diseases; it is given internally, in doses varying from a dessert to a table spoonful three times a day; it may be prescribed in the

form of emulsion; the oil may be used as a liniment externally.

For inflammatory swellings of the cervical glands, the *liq. plumbi diacetatis dilutus* ℥v. with *sp. rectific.* ℥i. forms a good lotion; at other times, an evaporating lotion of *liq. ammon. acetatis*, with *sp. rectific.* Solutions of salt and water, alternated with *ung. potass. iodidi*, or *tinct. iodinii*. When the tumours are disposed to suppurate, the moment the smallest blush appears on the skin, and before the skin assumes a livid hue, it is better to puncture them, which should be done with a lancet, in the direction of the creases of the neck, so that when the wound heals no scar is to be perceived. The solid matter should be gently pressed out. If the wound be indolent, it may be injected with a solution of sulphate of zinc, gr. ij. to ℥j. of water, or solution of iodine, in the same proportions. In general these wounds heal kindly, if covered for a few days with a bread and water, or moistened lint poultice, and subsequently with *emp. saponis*; the general health must at the same time be attended to.—H. D.]

DYSURIA.

Difficulty in micturition was mentioned in the chapter on dentition, and has been found more commonly troublesome during that process than any other period during infancy. The pain is sometimes exceedingly great, if we may judge from the long and violent shrieks of the child, who at times seems likely to be thrown into fits; but upon voiding the urine, becomes instantly quiet, and returns to its wonted cheerfulness and ordinary habits.

Demulcent remedies, as noted in the chapter on teething, may be tried; but if the infant be very young, or nourished by the breast, they can rarely be taken in sufficient quantity for any length of time. If they fail, therefore, of good effect, I have added antimonial wine, which has always very soon been of use, in the form of a saline mixture, with mucilage of acacia. Or a decoction of carrot seeds, has often afforded

speedy relief: as also, a few drops of balsam capivi, mixed with yolk of egg, in milk.

Together with either of these, I have kept the bowels open with castor oil and manna; have thrown up a clyster, twice a day; and put the infant up to the waist in a tepid bath, twice or more every day, when the pain has been most urgent; and in older children, have directed from half a grain to a grain of opium to be introduced into the rectum every night at going to bed.

In some forms of this multifarious disease also, the *solutio arsenicalis* has lately been administered with success, and with safety, if confined to very small doses, once or twice a day.

ANASARCA AND ASCITES.

I shall not enlarge much on these disorders, however important, since they are not very common in young children; I have met with instances of both, however, at different ages.

In the chapter on teething it was remarked, that although a considerable depot of water may be made on the tops of the hands and feet during dentition, a general anasarca, or ascites, does not take place, if there be no internal disease: and, indeed, whatever bad health may, for a while, be induced by difficult teething, a morbid affection of any of the viscera is very rarely a consequence, unless a purging be improperly suppressed.

But infants previously in bad health, and especially such as have been prematurely weaned, or fed upon too thick victuals, not unfrequently have indurations of the mesenteric glands; and the complaint may be followed by dropsy, if dentition should at this time prove unusually difficult; and is then more likely to be fatal.

One case of anasarca, accompanied with ascites, was of this kind, the infant having previously had a tumid and hard belly, loss of appetite and fever; and though these symptoms had been entirely removed, and the child remained apparently in good health for several weeks, a renewed process of dentition was

accompanied with an universal anasarca, and a large collection of water in the belly, with an almost entire suspension of the urinary secretion.

Purging with calomel and jalap produced no good effect, nor moderate doses of squill, *spir. æther. nitrosi*, and other diuretics; but an increased dose of these, and an ointment as in the following formulæ, soon produced a change, and both the anasarca and ascites in a little time gave way.

R.—Infus. amari ʒij. Aq. destil. ʒj. Vini ferri ʒss. Tinct. scillæ gtt. viii. ad xij. Tinct. cinnamomi gtt. xv. Syr. aurantii ʒss.—Misce. Ft. haustulus quartis horis sumendus.

R.—Ung. hydrarg. fort. ʒss. Olei. olivæ ʒxiiij. Spir. terebinth. G. camphoræ āā ʒj.—Misce. Ft. linimentum, quo inimgatur tota umbilici et dorsi regio bis quotidie.

The following pill also recovered an infant of fifteen months old, after being in a very debilitated state; though the operation both as an emetic and a purge was very considerable, requiring strong cordials and wine for the infant's support. One pill was given every six or eight hours for two or three days; nor would so powerful a medicine have been ventured upon if every gentler mean had not failed.

R.—Gummi ammon; Scillæ recentis; Sapon. venet; Pulv. sem. cardam. āā ʒss. Elaterii ʒj. Antimon. tartaris, gr. x.—Misce. Ft. massa pilularis cum syrupo alth. et divid. in pil. xxx.

A remedy brought lately into use, as successful in adults, though I have had no opportunity of making trial of it in young children, seems worthy of notice, as it is not so nauseating as the above, nor as many other diuretics. Indeed, it does not always act upon the kidneys, though it frequently carries off the complaint; sometimes by promoting a general diaphoresis, and at others, by somehow promoting absorption, and strengthening the primæ viæ. The remedy consists only of the expressed juice of the leek, which I have given to an adult, in the following form:—

R.—Succi porri expr. ʒj. ad ʒiiij. Mucil. gum. arab. ʒij. Tinct. cardam. comp. ʒss. ad ʒj. Aq. destil ʒvi.—Misce. Ft. haustus, bis ad quater in die sumendus.

External stimulants are sometimes proper, especially in the serous dropsy consequent upon a debilitated, rather than a morbid state; of this kind is the application of a broad flannel band round the abdomen and loins, dipped in spirits of harts-horn diluted with water, about two parts of the latter to one of the former, which may be increased as the parts are found able to bear it: which has had an immediate good effect. In its stead the following may be had recourse to.

R.—Linimenti saponis ℥iss. Tinct. cantharadis ℥ss. Misce.

If but little benefit should be procured by medicine, in a reasonable time, it may be proper to make a few punctures on the tops of the feet, and especially on the præputium penis, if that part be very anasarcaous; there being very little hazard in young children of the punctured parts inflaming, or becoming troublesome.

After the water is got off, and diuretics laid aside, the steel joined with cordials should probably be continued, till the child's strength be restored.

It may be needless to suggest, that as dry a diet as may be should be employed, and the bowels be kept open throughout the disease.

Ascites in an infant successfully treated by tapping.—This case, which we had the pleasure of attending in consultation with Dr. Chowne, is extremely interesting both as regards the age of the patient and the successful result of the operation; it will be found detailed by Dr. Chowne in the *Lancet*, vol. ii. 1842-3, p. 121.

“A child, from her birth delicate and liable to a disordered state of bowels, but without any apparent glandular disease, had (owing to a series of events, which made changes expedient) four wet nurses in succession.

“She went, when about nine months old, with her family to the sea-side, where she appeared to improve in general health; but her abdomen, without any apparent manifest cause, became gradually much enlarged. November, fourteen months old: has torpid bowels, tumid abdomen, fluctuation distinct, suffers extreme irritation of the genitals, rubs herself violently, temper

very irascible, appearance delicate, but not unhealthy; has eight incisor teeth, and is cutting the anterior molares; is at the breast, and also feeds largely.

"She has had alterative, aperient, and diuretic medicines at first with some apparent benefit, and subsequently medicine calculated to give strength and tone to the system, and to increase the secretions. Tepid salt-water bath, friction, lotion of argent. nitras to the parts; moderate her quantity of food.

"December 10.—Has improved in general health, cut two molares, her abdomen increased in size, partly attributable to flatus, the superficial veins much enlarged. Towards the end of December the disease became more aggravated, accompanied with dyspnœa; after several consultations the operation of paracentesis abdominis was agreed upon. The circumference of the body now being twenty-four and a half inches.

"December 28.—The operation was performed by Sir Astley Cooper, as the child lay on her side at the breast of the nurse; the quantity of fluid removed was five pints; it was of a greenish straw colour, and contained abundance of albumen. The child bore the operation well, and without any apparent inconvenience. Upon examining the abdomen after the operation, nothing abnormal was felt, except, perhaps, a little thickening of the lower edge of the liver. The admeasurement of the abdomen after the operation over the roller was eighteen inches.

"Occasional small doses of calomel were given with tonics and diuretics. Accumulation of fluid again took place, and at one time the circumference of the abdomen was twenty-one and a half inches. From this a reduction took place gradually, though with slight variations, and occasionally slight increases. Some disturbance of the system was occasioned by the cutting of the cuspidate, and occasional irregularities of the *prima via*.

"The child went on progressively improving in strength and vigour, and on the 24th February the circumference of the abdomen was sixteen inches. She is now nine years of age, and in every respect a healthy girl.

"Sir Astley Cooper performed the operation with the child

in the semi-recumbent position to prevent the occurrence of syncope, and with a trocar, as being less likely to wound the artery than with a lancet, and he selected the linea alba, at about an inch and a half below the umbilicus, as a less distance, he said, would not be sufficiently far removed from the union of the umbilical arteries. Sir Astley further observed, that it was the youngest patient on whom he had ever performed the operation of paracentesis abdominis, and he was much gratified at its success."—H. D.]

ISCHURIA VESICALIS E MUCO.

By this term is here intended an affection of the prostate gland, or the coats of the bladder; though the same symptoms may also arise from the ureters or kidneys, whether owing to a stone or other stimulus.

Like the last-mentioned complaint, it sometimes appears during dentition, and other inflammatory affections, and will then call for cooling remedies; it generally disappears when the teeth have made their way through the gums, and the fever subsides. Even in more advanced childhood, there is nothing like fever or other precise marks of disease excited by this complaint; though it may be said, this disorder more commonly attacks children of a tender and delicate habit.

It is attended with the like frequent inclination to void the urine as in the former complaint, and with more or less pain in its excretion, or more commonly before it begins to come away. But in this disorder the urine is always very foul, is loaded with a very ropy mucus, and sometimes comes away discoloured with blood, and at others, some coagula fall to the bottom. This disorder, indeed, puts on every appearance of the like disease common in adults, especially in old men, but is usually much slighter, and therefore more easily and speedily cured; for children being more irritable, the urinary passages are over stimulated by causes that would not affect adult persons.

The appearance is nevertheless alarming, as it may, possibly, arise from a morbid affection of the prostate gland, or

the bladder, and must then be a serious complaint; or it may be owing, as has been observed, to a stone in any of the urinary passages, in which case a cure cannot be effected as long as the stone remains. Fortunately, however, this is not a frequent cause in early childhood, and is not the case here intended.

The disorder sometimes yields in two or three weeks to mere diluent and demulcent medicines, such as *lac amygdal.* with *syrup. alth.* barley water and gum arabic, spermaceti, and such like; and it is probable, in such instances, might in a short time disappear of itself.

In other instances more powerful means are required, which, either by creating a different stimulus, change the action of the parts affected, or, by their astringency, prevent that secretion which has been the cause of the irritation.

The *aqua calcis.* *aq. kali*, *balsamum copaibæ*, or *decot. corticis*, seem to be the properest remedies in the absence of fever. From three to ten drops of the *aq. kali*, or *balsam. copaibæ*, according to the age of the child, will be a proper dose, and may be taken three or four times a day, as the urgency of the complaint may require.

After appearances of being perfectly well, the urine, in some instances, has become as turbid and mucous as at first, and the former irritation returned. In one such case, the complaint seemed to yield to an infusion of the golden rod, of which two or three spoonfuls were taken three times a day.

ISCHURIA RENALIS, OR SUPPRESSION OF URINE.

This dangerous disorder is easily distinguished from the *ischuria vesicalis*, or ordinary suppression of urine, in which the secretion is duly made in the kidneys, and the urine conducted to the bladder; but being detained there, the accumulation is readily discovered both by the pain and tumour in the pubic region. In the *ischuria renalis*, on the other hand, the urine is not secreted at all: but the superabundance of watery fluid is retained in the blood.

The disorder, I believe, is more common in adults, especially elderly people, than in childhood, and is a true palsy of the kidneys. In such instances, if the secretion be not restored in about twenty hours, the suppression has usually proved fatal very soon; though it is not commonly preceded by any considerable derangement of the health.

In these respects it corresponds nearly with the ischuria of infants; for the former, and a very accurate account of which dangerous disorder, we are obliged to Dr. Willan, who happened to meet with several instances of it within a short space of time: in each of these the disease was introduced by similar symptoms, a slight feverish heat being observed for about a week, accompanied with diarrhoea, and sometimes bilious vomiting. Towards the end of this time the urine was made in small quantity, and in about twenty-four hours the discharge of it entirely ceased, and the patients died unexpectedly, without complaining of pain, or any particular uneasiness.

Inflammation of the mesentery is judged to be the source of the first symptoms; and the suspicion has been supported, in one instance, by an examination of the parts after death. A gangrene, also, which had taken place, Dr. Willan conceived to be the cause of the fatal suppression of urine; but in a subsequent instance, it was found otherwise, the patient being perfectly recovered from the suppression, and apparently restored to health by the application of leeches to the belly, and a blister near to the os sacrum; but the child died about a month afterwards with symptoms of hydrocephalus, distinctly marked.

The above-mentioned remedies, with gentle purges, clysters, and cooling diuretics, and the repeated use of the warm bath, are probably every thing that our art has to offer for the cure of this disease in infants; and were its symptoms more distinctly marked, or formidable in their first appearances, so as to lead to a recourse to it on the earliest approaches of the disorder, the remedies might be oftener successful than they have hitherto been. A very distinguishing symptom of the Ischuria

Renalis, if not always, yet frequently accompanying this disease, is an unwillingness or inability in the child to bend, or to be bent forward.—S. M.

THE GRAVEL.

Although we see children of almost every age afflicted with stone in the bladder, and such frequently voiding of gravel mixed with their urine, the gravel is by no means a common complaint in others. I have, however, been several times consulted for children, under three years of age, who have been so affected; which has seemed in some instances to be hereditary.

The disorder is usually slight at this early age, and merely accidental, sometimes disappearing of itself in a few days, or after taking only a little oil and manna, or other soft laxative, and some of the demulcent medicines recommended for the ischuria è muco. In other instances, I have directed a decoction of marsh-mallow and parsley, or wild carrot roots, or the infusion of sweet-fennel and wild parsley seeds, sweetened with syrup of marsh-mallows or honey. A bit of Castile soap also may be dissolved in milk, and taken as a breakfast or supper: or a few drops of *bals. copaibæ*, be administered two or three times a day, and the body kept open by the *kali tartarisatum*, or the *sal polychrestum*.

Should the complaint continue long, and the quantity of gravel increase, as much Seltzer water should be drunk daily as the age of the child may admit. If it be attended with much pain, the warm bath would, probably, be useful; but I have never known it so great as to require any kind of opiate.

This complaint, however, is sometimes more serious, lasts several months, and the water is almost daily loaded with gravel of different kinds; being sometimes soft, and of a pale colour, and at others, red and very gritty, or sand-like.

One case of this kind in an infant of two years old, after appearing to be benefited by several of the above, and by other medicines, returned again with greater violence than ever, and was attended with great pain in micturition. Se-

datives, general diuretics, calomel, and the bark, were in turn had recourse to; the latter of which, together with a free use of mephytic water, appeared to carry off the complaint, and the child went into the country.

“ It should be constantly borne in mind, that by proper care the formation of stone in the bladder may almost certainly be prevented, but that by inattention this dreadful occurrence is as certainly likely to take place; as I have seen happen, for example, when children, under such circumstances, have been sent to school and neglected. It seems, therefore, to be a duty highly incumbent on parents to attend to this point.” *

“ The circumstances under which lithic acid appears in the urine, and the constitutional symptoms with which it is associated, together with the tendency and danger of the affection, are liable to considerable modifications, according to the age of the patient. Children in general, and particularly the children of dyspeptic and gouty individuals, or who inherit a tendency to urinary diseases, are exceedingly liable to lithic acid deposits in the urine. These appear not only under the form of amorphous sediments, as before mentioned, where there is seldom much irritation in the urinary organs, but frequently, also, in the form of crystallized lithic acid: in this case symptoms of irritation about the urinary organs may be always more or less observed, if the child be attended to. Thus there will be found a frequent desire to pass urine, which is voided in very small quantities, and with manifest uneasiness. The irritation about the urinary organs also frequently induces the child to wet the bed by night, &c. In such cases, if the urine be examined, it will be always found to be very unnatural, and frequently loaded with lithic acid; and should this prove to be the fact, the case requires immediate attention, as there is much greater risk at this period of life than at any other, of the formation of stone in the bladder.” †

“ *The lithate of ammoniæ calculus* is generally of a clay

[* Prout on diseases of the urinary organs. Second edition, p. 147.]

[† Ibid. pp. 131, 132.]

colour. Its surface is sometimes smooth, sometimes tuberculated. It is composed of concentric layers, and its fracture is very fine earthy, resembling that of compact lime-stone. This calculus seems to be principally confined to children under puberty, and hence is generally of small size, and rather uncommon.*

"In what are called the better classes of society, you will find the deposition of red sand to exist chiefly in adult persons, but in the lower classes you find it chiefly among children. These circumstances are easily explained. Adult persons in affluent circumstances, for the most part, lead a more luxurious and indolent life than their children; while among those of lower condition, the diet of the children is frequently unwholesome, and comparatively little attention is paid to the various derangements of the digestive organs to which they are liable."†

"Among the lower classes, children are much more liable to calculi than adult persons. You know how large a proportion of hospital patients admitted for lithotomy are children. On the other hand, in private practice, that is, among the upper classes of society, very few of our patients are children, and the great majority are persons above fifty years of age. Nor are these things difficult of explanation. In most instances the original calculus is composed of lithic acid, that is, there is a lithic acid nucleus; and in a former lecture, I pointed out some circumstances which are likely to make the children of the lower classes, and those who are advanced in life among the higher classes, especially liable to this kind of deposit."‡—M. H.]

INCONTINENCE OF URINE.

This is not a very common complaint, I believe, in children,§ unless combined with the stone in the bladder, and

[* Prout on diseases of the urinary organs. Second edition, p. 87.]

[† Brodie on the urinary organs, pp. 150, 151.]

[‡ Brodie's Lectures on the urinary organs, p. 198.]

§ This complaint has occurred in my practice rather frequently, and not combined with stone in the bladder.—S. M.

then is not so constant, nor to that degree that is intended here. It is an involuntary flow of the urine, sometimes by day as well as during the night; arising, I apprehend, from a relaxation or other affection of the sphincter of the bladder, as in very old people, but is not attended with manifest fever, or symptoms of decay. An affection of this kind, in which the urine runs away in the sleep only, is more common; and I have known it continue to the age of fifteen or sixteen years when not properly treated, and afterwards yield to sea-bathing. If, however, it be an original affection, and confined only to the night, (when every part is more disposed to relaxation,) and the child be young, it usually disappears as the child grows up, and thereby acquires strength; but it may be often assisted in the mean time, merely by exercise, living on dry food, dashing the contiguous parts with cold water, and such means as may tend to impart tone to the sphincter muscle and neck of the bladder, and scrupulously abstaining from drink near the time of going to bed: perhaps camphor and laudanum, often useful in the like infirmity in old people, may not improperly be made trial of.

The total incontinence generally comes on gradually, and is sometimes attended with excessive gonorrhœa, even in very young children, and is more difficult of cure: so likewise, if the complaint should succeed to other disorders, as the stone, inflammation of the neck of the bladder, or to the forcible use of the catheter, and especially if it follow any somniferous disease, or a palsy of any other part of the body; in which case the appropriate remedies must be employed.

In a general way, tincture of catechu, or of gum kino; the *cortex peruv. balsam. copaibæ*, and *vitriol. album*, may be made trial of; but nothing is usually so effectual as repeated blisters applied over the os sacrum; with proper doses of the *tinctura cantharidis*, or the powder, carefully administered in some soft emulsion. The former may be administered in doses of ten or fifteen drops to children, from five to ten years of age, and increased to two scruples and a drachm, two or three times a day; or the powder, from half a grain to a grain and a half, given as often; which has generally removed the com-

plaint, if there has been no morbid affection of the spine, as is sometimes the case. If these means should fail, recourse should be had to sea-bathing, and other tonic remedies. But from remarks made on this weakness in very young children, who from unwillingness to be disturbed in the night, almost constantly wet their beds, I have advised to take them up frequently in the night, and place them on the pot; not suffering them to rise from it till the bladder be emptied. By this means children, whether from the habit of getting rid of the urine, or their dislike of being so often taken up, have been uniformly induced to call, and even awake their attendants as often as necessary; and the complaint has, in consequence, entirely disappeared.

[“The involuntary discharge of urine in children is a sympathetic affection, never present without some derangement of the digestive organs; and when that disturbance is once cured, the involuntary discharge of urine ceases. Indeed, so fully aware are some parents to whom I have communicated this view of the complaint, and in whose experience it has been verified, of the accuracy of the remark, that the recurrence of the discharge of urine in a child who had once been afflicted with it, has been to them a sufficient warning of the return of the primary bodily evil.

I may briefly remark, that the affection to which I here allude is more frequently met with in boys; that it takes place only in bed, usually towards morning, and commonly about the same hour; that in some patients it occurs every day; in some irregularly; in some it continues only for a few weeks or months, while in others it lasts for years. In all cases the digestive apparatus is deranged, and more commonly the large intestines.

CASE.—A youth, ten years of age, had been for some months subject to void his urine almost every morning whilst asleep, to correct which a variety of means had been contrived. When at school it was considered by the master to be a bad habit, and he was subjected to cruel and harsh punishments. He had a sallow complexion, a loaded tongue, a craving ap-

petite, his bowels were irregular, and the abdomen was tumid.

The alimentary canal being first evacuated by the free use of purgatives, I ordered him every alternate night one grain of calomel, combined with two of rhubarb, and a small dose of soda and rhubarb twice a day. Under this treatment, his health progressively improved, and in a few days he no longer suffered from the involuntary discharge of urine. He was, however, occasionally subject to attacks for several years afterwards, and whenever that symptom recurred, his parent considered it as a warning of a disturbance in his health, which was treated accordingly, and the habit ultimately destroyed." *—M. H.]

POLYDIPSIA, OR EXCESSIVE THIRST.

The affection here adverted to is not a symptomatic, but an idiopathic disease, though it seems to depend, indeed, upon an idiosyncrasy; and is equally incident to children as to adults. It is, however, so rare a complaint in either, that but little can be said of its true nature, there being but few instances upon record. Of these, one began at or soon after birth, and another when the child was about four years and a half old. The former, in whom the disorder continued in a very extraordinary degree, became the mother of eleven children. The latter, while a child, and very lively, and apparently healthy, drank every twenty-four hours ten quarts of water, and made daily twelve of urine, as clear as the water he drank. Through the day he required a draught every half hour, and once every hour in the night.

Dr. Simmons, I believe, gave to the public the first accounts of polydipsia, as idiopathic, and has been at great pains in ascertaining the facts. Boerhaave, indeed, seems to speak of such a complaint, and Zuingerus of immoderate thirst as a very common affection of young children, coming on without fever or any other complaint, unless it be a lassitude of the extremities, and says, the appetite continues very good, but the

[* From Clinical Observations, by Mr. Wardrop: "Lancet" for Oct. 25, 1834.]

desire for drink so great, that on withholding it they express vehement displeasure, and are threatened with convulsions, and other nervous disorders. He does not, however, allude to the quantity that such children require, and adds, that in a little time their bellies become tumid; that they are subject to glandular affections, and fall into atrophy. On these accounts, this species of polydipsia seems to have no relation to the cases adduced.

The above-mentioned instances of it occurred in France, and one has been met with in Stanground, near Peterborough, in an adult man near fifty years old, in whom the affection first took place after an intermittent fever, when he was in his twenty-seventh year. A similar case also presented itself some years ago at the Middlesex Hospital. This was in a child; but the thirst was not, in this instance, so great as in the aforementioned ones.

Though I can have but little to offer with any confidence, for the treatment of a disorder which is both rare, and depending upon a peculiar temperament of the body, yet this curious disease appears worthy of some notice, in a work that is thought to comprehend a more complete account of the disorders of children than has hitherto appeared. A slight record of it will also possess the further advantage of apprising practitioners of there being such a complaint; which, it is presumed, cannot fail of being acceptable, if any into whose hands the work may fall, should meet with children who have any evident tendency to it.

How far internal tonic medicines, with the cold bath and electricity, or attempting to promote insensible perspiration, might tend to a removal of it, upon the first approaches, I can hardly venture to say; but the plan seems worthy of trial, as might that recommended by Dr. Rollo in diabetes.* This refers equally to regimen and medicine. Hepatised ammonia makes a chief part of the latter, administered at first in very small doses. The diet should consist of milk, with lime water, for breakfast and supper, and animal food for dinner, and that long kept, and very fat, without the least vegetable, bread, or

* Notes of a diabetic case, 1797.

other farinaceous substance. Confinement to the house, and rest, are also strictly enjoined. But if none of the above means, nor any other remedies that may be suggested, should pretty soon afford any degree of relief, it is presumed that no violence should be offered to so peculiar a temperament, lest some worse or real evil should appear in its place.

In the Medical and Physical Journal,* however, notice is taken of instances of this disorder occurring in adult persons; the one in a French clergyman, at Berlin, and the other, in Dr. Dyce, of Aberdeen. The former seems to have been perfectly cured by very simple means by Dr. Domeier, who, in order to check the excessive perspiration that, in this instance, accompanied the disease, made his patient dress much cooler than he had been accustomed to do; to use the cold bath, and put his feet, from time to time, into cold water. He likewise directed acidulous drinks, made with the sulphureous acid, to quench the inordinate thirst.

In consequence of the account by Dr. Dyce, another instance of this disease, in an adult person, has appeared in the same journal,† which was also cured by somewhat similar means, in the course of a month. An ounce of *cort. peruv.* and half a drachm of *sulph. zinc.* was divided into sixteen doses; one of which was taken every six hours in a glassful of wine. Porter was the patient's drink, with the tamarind decoction to allay his thirst; and after a while, an opiate was taken at night, and fifteen drops of the *acid. vitriol. dilut.* three or four times a day, whilst the bowels were kept open with castor oil.

DIABETES INFANTILIS.

This complaint is related by Morton in his Phthisiologia, and is worthy of notice in this place, but is not an idiopathic disease, like the former. He mentions it as not being a common disorder, and terms it a consumption from diabetes, attended with great thirst, as in the forementioned disease. He speaks of it as the effect of irritation from teething, and as a family disorder, having been fatal to all the male children

* For October, 1800, No. xx.

† Vol. iv. No. 21, by Tuaam Peaal.

in one family, except the last infant, to whose assistance he was called at the commencement of the thirst, and increased secretion of urine; which was sweet, as in the diabetes of adults.

This child, therefore, appears to have been saved by the treatment he adopted, but was not entirely free from complaint, as he had rightly foretold, until all the first teeth made their way. In the progress of the complaint, the Doctor remarks, that the diabetes was attended with considerable diarrhoea, under which the infant wasted fast, but without cough. The treatment, in the mean time, consisted in confining the child strictly to a milk diet from the first, and to allay the excessive thirst, he allowed only milk to be mixed with the Islington chalybeate water. This plan very soon became useful; but the symptoms recurring with aggravation whenever a tooth was making its way, the doctor was induced to advise a few grains of rhubarb every morning, and a little diascordium at bed-time. These means were persevered in for two years, that is, until the first teething was completed: after which the child enjoyed perfect health.

THE SEVEN DAYS' DISEASE, AND PECHEGUERA OF SPANISH
SOUTH AMERICA.

I shall close this part of the work with a brief account of two very extraordinary disorders, which should have been noticed among the earlier complaints of infants, if they had been diseases of this country, or even much known in other parts of Europe. As the seven days' disorder has, however, actually made some appearance in this quarter of the globe, and may, therefore, at some future period, become more common, it may be proper it should be mentioned. The following account is translated from the French of M. Le Febure de Villebrune, who refers to the Spanish work of D. Ulloa, (*Disc.* xi. §§ 19 and 20) and Barrère's Voyage to Guinea.

"§ 19. The disease of seven days of new-born infants is common in both quarters of America, and equally dangerous in the high, as in the low parts. A great number of infants

die of it without any symptom antecedent to its accession, leading to a suspicion of it. They are, on the contrary, apparently healthy and robust, when the disorder makes its attack in the form of epilepsy: and few of those who are visited with it are found to recover. Though it has been said this complaint is not altogether unknown in Europe, it is neither so common nor so dangerous. It is conceived that the best preventive would be to guard infants from being exposed to the wind, till the first seven days are over."

This imperfect account allows of very little comment; but it seems probable, that this disorder may not be very unlike the tetanus of the West Indies; and from the mode of prevention proposed, the disease may be owing to some local custom or circumstance, as Dr. Clarke has noticed in regard to the latter.

"§ 20. But infants at Guaneavelica are still liable to another very extraordinary complaint. Having escaped the seven days' disease, they thrive well until the third or fourth month; they are then seized with cough and pulmonic affections, which they there call pecheguera. The complaint goes on increasing without any sensible relief from the medicines made use of, and, a swelling taking place, they presently die. The disorder attacks only the white people, or children of the Spaniards; the Indians and the mongrels are not subject to it. The way to escape it is, to remove infants from the spot before they are two months old, and to carry them to more favourable climates, into one of the Zuebrades, (or low grounds between the mountains,) that are at a little distance. It is imagined, that the cold and intemperature of the climate is the occasion of infants being so soon seized with this complaint. This may be the case in some degree: but the vitiated habit of body of their parents, and the sulphurous vapours continually arising from the furnaces for the extraction of mercury, may likewise contribute to it. In fact, these vapours are so abundant, that when re-united by means of the cold, they form such a thick cloud in the atmosphere, during the season there called summer, as to cover all the colony." — *Notic. American. disc.* p. 205. L.

SECTION VI.

ON THE TOPICAL DISEASES OF CHILDREN.

IN the former Part, considerable attention has been paid to cutaneous disorders ; either from their being found to require direct medical treatment, or from their standing in connexion with other complaints, strictly appertaining to the physician's department.

There are, nevertheless, many affections of the skin of a different kind ; which being either usually unconnected with any disorder of the system, or else forming sores on the surface requiring appropriate topical remedies, accord more strictly with the province of the surgeon, and will therefore be considered in this place.

Of the cutaneous affections coinciding with one or other of the latter descriptions, I shall, for the sake of some order, treat first of such as appear on the head,

TINEA, OR SCALD-HEAD.

(*Porrigo Scutulata.* Willan.)

The tinea, or porrigo, is a very troublesome complaint, and is said to be often a scrofulous symptom ; but it is certainly more commonly communicated by contact, and when lighting on a scrofulous habit may be more difficult to cure. It is, indeed, highly contagious, especially amongst children at schools, or other places where they mix freely together, exchange hats, or other covering of the head, with such like intercourse ; by which means, it has been sometimes communicated through a whole school. I hope, however, to point out a successful method of cure, the unpleasantness of which has

improperly, I think, prevented its being more generally adopted.

From considerable experience, I may venture to say, that this being usually a mere complaint of the skin, is most successfully treated by topical applications. The disease is seated in the little glands at the roots of the hair: is sometimes dry, but at others moist, and then produces little ulcers, which being thoroughly cleansed, and made to digest, may be safely healed up; as I have found in many other affections of the skin, in which the system has, often over-scrupulously, been conceived to be concerned.

If the complaint be taken early, before it has spread far over the head, and whilst the scabby patches are small and distinct, it may frequently be cured by an ointment made of equal parts of sulphur, flower of mustard, and powder of staves-acre, mixed up with lard, or other unctuous substance; or by the sulphur ointment, with a small addition of the *calx hydrargyri alba*. And this last preparation may very safely be made use of, if the patient be kept within doors, and the body properly open; as it will be necessary to rub in only a small portion, once or twice a day, on the parts immediately affected. But if the disease should spread, or has already extended itself over a great part of the head, the hair must be shaved off, and the head washed twice a day with a strong decoction of tobacco;* repeating this process till the scabs disappear, and the hair grows up from the parts they had occupied. Or, instead of the decoction of tobacco, the head may be well washed with the *lotio saponacea*, with the addition of a small quantity of the *liq. potassæ*, and the scabs anointed with the *unguent. hydrargyri nitrati*, in the place of the sulphur ointment and calx of mercury, the former being a very powerful, as well as a safe application, which may be used in any quantity that may be necessary.

But the complaint is sometimes of long standing before medical assistance is solicited, and is not only extended over

* A case of stupor, ending in death, occurred a few years ago at Shoreditch, from the incautious manner in which a father washed the head of his child, with a strong decoction of tobacco, for the cure of tinea.—S. M.

all the head, but the scabs are thick, and rise high above the surface, returning as often as they may fall off. I have, however, never failed to cure the common tinea by a method, perhaps well known, but too seldom complied with in time, on account of its supposed severity. It consists of well washing the head, first closely shaved, with a piece of flannel and a strong lather of soap suds, and then rubbing in very forcibly an *unguentum picis*, made of the *petroleum*, instead of the *pix liquida*, (and if this fail, adding a good quantity of the *pulvis hellebor. alb.* or other safe depilatory,) for near an hour at a time, always using it very warm; and covering the head with a bladder to preserve the ointment on the part, as well as to keep it from sticking to the cap, or other covering made use of: whilst it is otherwise useful, by promoting perspiration. When this has been done three or four times, not only the scabs, but the hairs will also loosen, which must be pulled out, however unpleasant the operation may be, as it will, indeed, prove a kindness in the end; and must be repeated till all the hairs be taken out: after which, new hair will rise free from scabs, which is a sufficient indication that the disorder is effectually removed. Some writers, with the like view, advise the application of repeated blisters, after the head has been close shaved.

The following plaster is strongly recommended by Mr. Thomas Morrison, Surgeon in Dublin, as successful in the worst cases.

The head is to be well washed, and a bread and milk poultice applied, if the scabs are very dry; and the following plaster afterwards applied, spread on strips of linen, which are to be renewed every day.—Take of common ale, one pound; of the finest flour, three ounces; mix them intimately; and having set them over a very brisk fire, add two ounces of yellow resin, stirring them constantly until they shall be perfectly incorporated, and take on a small gelatinous appearance.

[Where the porrigo is in distinct patches, as the usual form of porrigo scutulata, or *P. decalvans*, it is most successfully treated by the application of the pyroligneous or strong acetic acid; which should be applied by a piece of soft linen rag or

sponge, attached to the end of a stick, the former to be slightly touched, the latter, or decalvans, to be rubbed with the acid for a minute or two till it produces a sort of white vesication, and subsequent redness; it should not be touched again until the redness subsides. Many, or slight cases, will be cured by one application, and the majority by two or three; the head being, of course, daily washed, and the hair kept short. Care should be observed not to apply the acid too often, or too long, as in that case it is apt to produce an irritable surface, very difficult to be got rid of, after the original disease has been eradicated. Herein practitioners appear to have been misled, and to have induced a worse form of disease than the one intended to be removed.

In the variety termed *favosa*, the first step to be taken, is to free the scalp from incrustations, by daily soaking the surface with warm water and soap, and the application of poultices. The incrustations being removed, the hair is to be clipped close, but not shaved off; and the surface washed night and morning, with an alkaline wash of ʒij. of the carbonate of soda, or bicarbonate of potash, to a pint of tepid water, and afterwards anointed with the following ointment:—

R.—Potassæ bicarb. ʒj., Axungia ʒj. Ft. ung.

When the simple alkaline wash appears to lose its efficacy, a weak solution of chloride of lime or soda may be substituted, or the following:—

R.—Potassæ sulphur ʒij., saponis alb. ʒiiss., liquoris calcis, ʒviij., sp. rect. ʒij. Ft. lotio.—*Green*.

Afterwards we have found the following most efficacious:—

R.—Ung. picis ʒj., sulphuris ʒij., axungia pp. ʒvj., acid sulphurici gtt. viii. Ft. ung. To be gently smeared, or laid on daily.

While these remedies are being applied, most unremitting attention should be paid to the daily ablution of the head, the removal of the dead hair, and carefully drying the surface. The head is best kept uncovered in the house. During the local treatment, regard should be paid to the general health; for notwithstanding what has been said to the contrary, be it the cause or the consequence, there is always a degree of

cachexia observable in the patients; the bowels should be most carefully regulated, a nutritious and generous diet allowed, exercise taken in the open air, and tonics administered where requisite. H. D.]

SCURFINESS OF THE HEAD.

(*Pityriasis capitis.* Willan.)

Some infants early contract a scurfiness on the head, which increases as they grow up; becoming likewise very thick, and itching exceedingly. It is more commonly dry, but is sometimes moist, and even discharges a great quantity of a very thin fluid. In either case, it can rarely be termed a disease, and is scarcely worthy of notice, but in a view to preventing mischief, from the application of improper remedies, or its degenerating into a real complaint, through neglect. Amongst the poor, indeed, it often arises from that source, and can be removed only by proper combing of the head, and otherwise keeping it clean. But should it arise spontaneously, as it sometimes does about the time of teething, very little need to be done, or ought to be, further than keeping the head clean, and often combing, or brushing it cautiously, as above directed: at most, the scabs may be touched, every now and then, with a little cream till they begin to loosen, or with a drop or two of arquebusade water, if they are too moist; at the same time, carefully avoiding taking cold on the part.

I have, however, sometimes seen a scurfiness of the head take place even during the month, and attended with an excessive discharge of a thin fluid; which it would be alike improper to repel or to encourage.

[Sponging the scurfy head with tepid water, with the addition of a little spirit, and afterwards diligently brushing it, I have always found a safe, and very often an effectual, remedy, for this complaint. Where the scurf is very thick and dry, the desquamation will be facilitated by the application of the citrine ointment, diluted with lard, after each washing; where, on the contrary, there is a copious fluid discharge, the black wash, applied twice a day, or a solution of the sulphate of zinc, will be found serviceable.—H. D.]

HERPES, OR RING-WORM.

Herpes Circinatus. Bateman.

The herpes, like the foregoing complaints, is a disease of the skin, infesting some children almost annually, and appearing in dry scurfy blotches, on different parts of the body, and usually of a circular form. It becomes troublesome chiefly from the violent itching that attends it, and would, probably, get well of itself: it even sometimes has the appearance of being critical, or is, perhaps, rather an indication of some favourable change in valetudinarians, especially in adults, who are sometimes found getting the better of chronical complaints at the time the ring-worm makes its appearance. It is, however, often a blemish, as it frequently attacks the hands and face, and especially the forehead; and in the former case is sometimes sore.

The herpes yields very readily to stimulating and astringent remedies. Spirit of wine; saturnine lotions, with the addition of vinegar, or white vitriol; and ointments containing lead answer very well; or an ointment of calcined zinc and lard: but the *unguent. hydrarg. nitratis* is preferable to most others. The use of a flesh-brush is a good prophylactic in habits accustomed to the complaint. It can be only in unhealthy children, that there can be any fear in regard to topical applications, or need of internal remedies.

HERPES EXEDENS, OR SERPIGO.

(Herpes Phlyctænodes. Bateman.)

This is a malignant species of the above complaint, but is generally local. It is mentioned in this place, as having relation to the former, being itself rather a sore than an eruption, and not very common in children.

Suppurative applications may be made use of in the early stage of the complaint, such as ointments of minium, soap, and Venice turpentine, or a suppurative poultice, in order to liberate the diseased glands on the surface, and absorb the

acid discharge. A very good poultice of this kind may be made of figs, onions, and white lily roots, boiled in water to a soft pulp, with or without the addition of a little bread and milk. After this, the parts should be washed with saponaceous lotions, and lastly, with strong solutions of *sulph. zinci*. Should these fail, the *ung. hydrarg. nitratis* will be proper; and, as the last remedy, caustic applications; of which butter of antimony is the best, and with this the little ulcers may be touched lightly from time to time. The patient may take at the same time a decoction of burdock-roots, or sarsaparilla.

HERPES MILIARIS.

(*Herpes Zoster. Bateman.*)

The herpes miliaris, zona herpetica, or shingles, was well known to the ancients; but has not, as far as I know, been accurately distinguished by modern writers, with the exception of Mr. Pearson; being confounded usually with the common herpes or ring-worm.

It appears in the form of small vesications, which are filled with an almost transparent fluid, which if large and distinct have but little redness in the interstitial spaces; but when they are confluent, there is a much more considerable discoloration.

This complaint is, however, attended with a feverish affection of the system, which the foregoing are not; and is often preceded by rigour, nausea, and sometimes vomiting; though it is very rarely attended with danger. The febrile symptoms do not usually disappear on the eruption of the pustules, which gradually subside as the fluid acquires a denser consistence; after which the pustules dry off in the form of dark-coloured crusts, and the disorder terminates in a period of, from eight to twelve days, and not unfrequently without medical aid.

In the confluent species, which is attended with more fever, the patient should be kept in a warm atmosphere, take gentle diaphoretics and cordials, and sometimes diuretics; and on the drying off of the pustules, a gentle purgative should be administered.

It is amongst the vulgar errors, that when it appears on the breast or loins, if it should extend round the whole body, it would prove fatal. It is this form of the disease that is termed *zona herpetica*.

VERRUCÆ—CLAVI PEDUM.

Those warts which appear upon the fingers, hands, and necks of children, may be considered as a small inconvenience or a trifling deformity, rather than as a disease. They are seldom painful, unless they have been improperly irritated; and have no tendency to proceed to any unfavourable event.

Surgical writers have generally agreed in considering them as the effect of a certain morbid state of that part of the skin in which they are situated; but what that peculiar condition of the skin is, by which they are produced, has not been exactly ascertained; the various accounts of it are all very problematical; and of these, perhaps Mr. Freke's is as ingenious as any.

The hard, and almost insensible wart, with a broad base, and having a cutical covering, is the most common species. This little excrescence seldom rises above the level of the skin, on the back of the hand; and is often remarkably flat and low when it germinates on the inner part of the hands or fingers; and, being a spurious production, seldom possesses a vital energy sufficient to prolong its duration beyond a few years. Hence we commonly observe, that those warts which appeared in infancy, disappear imperceptibly after the age of puberty, without the aid of external applications. This is sometimes the case, likewise, when warts have appeared in adult age, more especially when they have been small and sessile.

The various methods that have been recommended of destroying warts, may be reduced to two classes; namely, such as intercept the circulation of the blood through the substance of the wart; or such as produce a destructive inflammation in it.

1st. Ligatures made of horse-hair, or silk threads. When-

ever these can be conveniently applied, they are the least dangerous, and the most effectual. For it is a certain fact that warts removed by ligature return less frequently than when destroyed by any other means.

2ndly. Caustic applications, or the actual cautery; or spirit of sal. ammoniac with quick-lime; vitriolated copper; nitrated silver; butter of antimony; burning sulphur.

When the surface of the wart is destroyed by any of these applications, the hard crust must be scraped off the next day, and the medicament be re-applied; and this process must be repeated daily until the excrescence be destroyed down to its root.

When a wart is situated on a joint, or on one of the lips, or on the eye-lid, it will not be prudent to use caustic applications, unless under the direction of a skilful surgeon.

I have not mentioned the excision of the wart, because the excrescence is so very liable to sprout again when it has been cut through, that this method is advisable only when it is proposed to employ caustic applications to the wounded part.

CLAVI PEDUM.

Young people are less subject to these excrescences than adults; but, as they are, nevertheless, not exempt from it, a cursory notice of them may be proper.*

Corns appear always about the feet; usually the upper part of the toes, and on the joints; on the upper part of the foot where the pressure is the greatest; or under the nails; and are painful, especially if pressed much by tight shoes, or other covering of the feet. They differ also in other respects from the wart; the corn having the appearance of an inverted wart, the surface of the former being not unlike the inferior part of the latter.

The corn seems to be hardened skin, produced by compression; it is therefore rather a morbid change of that part than

* The reader may see a fuller account of the nature of corns, and their treatment, in a book by Mr. Durlacher, of Burlington Street.

an organized exerescence, and on that account does not endure the rough treatment of the wart: it may, however, be safely pared down from time to time, but not to that degree as to be made to bleed, or rendered sore, especially in people advanced in years. The common wafer made use of for sealing letters, moistened and applied to the corn, is both a harmless covering and defence, and has sometimes appeared to loosen this exerescence, and occasion it to be thrown off.

STEATOMATOUS TUMOURS, OR THE SUET-LIKE WART.

(*Mollusca. Bateman?*)

Besides the above-mentioned exerescences, there is one of a very different kind; which, though, when appearing about the neck and face, it passes with many people for the common wart, is really a suppuration of the little sebaceous glands. It appears chiefly about the face, neck, and head, where it often grows in great numbers. They more commonly infest young children, and particularly infants when cutting their teeth; and will fall off, and appear again frequently during that period. They discharge a suety, or cheese-like matter, as other inflammatory tumours of this class; after which, they heal up, and return again, like the stythe, or styne on the eyelids, until the little cyst that contains them is gradually destroyed.

Being of this harmless nature, it is unnecessary to say much more than on their treatment. As a preventive, the adjacent parts may be well rubbed two or three times a-day; but when the tumours are grown to a certain size, they should be inclosed in a ligature before they break, or should be touched with the *argentum nitratum* immediately afterwards. The application of vitriolic ether has likewise been recommended, as producing the greatest degree of cold during its evaporation.

I shall just add, that in very large steatoma, it has been

recommended * to pass a seton through the middle of the tumour; whereby inflammation and mortification being produced, large pieces of the substance of the mass are separated, until the whole is removed.

OPHTHALMIA.

Having discussed the foregoing trifling matters, we come to more serious complaints; and first, those of the eye.

This important organ, however, has also some slighter affections, which require but little attention. Accordingly we find, that the eyes of a new-born infant are very apt to water, as it is called, and be slightly inflamed, especially if the child have been born in the winter season. If the disease be owing to taking cold, it has probably originated immediately after the birth of the child, before it has been given away to the nurse, or very soon afterwards; and on this account a flannel cap becomes a very necessary part of its covering, previous to its being formally dressed. This kind of inflammation, however, is seldom of much consequence, generally disappearing of itself, upon merely keeping the head warm, or washing the eyes with a little rose-water. Should it, however, continue many days, or increase, three or four drops of the *aq. lithargyri acetati*, and a grain or two of white vitriol, may be added to two ounces of the rose-water; and the infant may take a little manna or rhubarb and magnesia, if the bowels should not be sufficiently open. A still more trifling affection is the *sugillatio*, which will oftentimes remain during the month, return, and disappear again, without the slightest injury to the infant.

But there is an inflammation to which infants are liable, that sometimes continues a long while, and therefore calls for further attention. This affection is accompanied with the true appearance of ophthalmia, attended with a discharge, as in the ophthalmia of adults; it will sometimes get a little better by common means, but seldom remains so for many

* See Gotha Journal of Inventions, No. xii.

days together, and generally increases at the end of the month. It often seems connected with the state of the bowels, and the coming on of a purging will then frequently cure it.

Only the more common remedies, however, are called for, unless it prove tedious,* in which case the parts behind the ears should be made sore, and kept so for some time. Previous to this, it is often necessary to apply a blister to the back, and a leech to one or both temples; to keep the body open, and make use of the cooling collyrium before recommended. If the child be inclined to a frequent return of it for years, as I have known even in very healthy children, it will sometimes degenerate into what is termed the watery eye; an excellent remedy for which is a grain of white vitriol, mixed with such a small portion of any unctuous substance as will form it into a liniment, which should be put into the inner angle of the eye every night, at going to bed. In some of these cases, however, the ointment of nitrated quicksilver has proved a more speedy remedy, and is a less painful application.

[In the common ophthalmia of infants the application of leeches or blisters is very rarely required, if attention be paid to the bowels. The eyes should be carefully washed every night and morning with tepid water, and dapped, more or less frequently, from six to twelve times in the day, with a solution of alum, or sulphate of zinc. One grain of the former, or one-half grain of the latter, to one ounce of rose water,—a fresh portion being used each time; if the eyelids are agglutinated the margin should be smeared with *hydrarg. nitr.*, one part to four parts of lard, every night. The eyes should not be covered nor exposed to the fire, the room should be darkened and kept cool. H. D.]

There is, however, a case of watery-eye affecting older children, in which the discharge is very hot and acrid, and the eye at the same time inflamed. These affections disappear and recur again suddenly, without children having sensibly

* For a more full account of the treatment of ophthalmias, see the author's Surgical Tracts, 3rd edition.

taken cold or any other manifest cause, and will continue so doing for a great length of time. It is not a common complaint, and as far as I have noticed it, has attended only such children as have other marks of humour, so called, or some disorder of the skin.

The complaint has proved very obstinate, both in regard to the inflammation and watery discharge, though all the common means of cure have been successfully attempted, until the head has been shaved, and an oiled silk cap applied over the whole scalp. This never fails to procure a great discharge from the head, in consequence of which I have known the disorder removed in two or three days.

OPHTHALMIA PURULENTA.

But there is a far more formidable inflammation, called the purulent ophthalmia, distinguished from every other by the vast quantity of thick matter discharged, and great swelling of the lids.

This is so dangerous an inflammation, as to require the best advice on its very first appearance. It now and then appears at the birth, but more commonly seizes an infant a few days afterwards, without any previous complaint; and when neglected, has sometimes not only destroyed the sight, but dissolved the eye itself in less than a week's time. I have likewise seen it exceedingly violent in children of four or five years old, but rarely at that age without some blow or other accident.

In this disease, every thing that may remove inflammation, and unload the vessels of the part, should be immediately had recourse to. The body should, therefore, always be kept open, and leeches be applied to the temples, especially in children of four or five years of age. In bad cases at this period, scarifications of the tunica conjunctiva, are necessary, as are blisters to the back, nape of the neck, and behind the ears. It should ever be remembered, that in advanced childhood, the taking away of blood at the beginning is often not to be dispensed with, nor to be sparingly done. The

application of one leech to the temple, or neck, will have no good effect; though often repeated, two, three, or more, according to the strength of the child, should be put on at a time, and a blister to the back soon afterwards; which will often do more to conquer the inflammation, than most other means.

Even in new-born infants, it is expedient in some cases, both to take away blood, and to keep up a constant discharge from behind the ears, which may be done by applying, every three or four days, a narrow slip of blistering plaster to these parts, and afterwards dressing them with the *ceratum spermaceti*, or other mild ointment. The edges of the eye-lids should be kept constantly greased throughout the day, especially in new-born infants, that the thick matter may find an easy escape. At night the *ceratum lithargyri acetati* may be spread on soft linen, and applied to the eye, and over it a very soft cold poultice made with the *aqua lithargyri acetati*, laid on as lightly as possible; that by its constant moisture, the eye-lids must always be kept supple. But if the discharge should seem to be confined, or the eye affected by the weight of the poultice, this application should be changed for soft linen rags, which should be frequently wetted with cold brandy and water, or some yet more astringent lotion.

Throughout the complaint, astringent and stimulating applications are to be made use of, unless the symptoms be very slight, or sensibly give way very soon to mere greasing the lids, as it sometimes will. What may be the very best remedy, in the worst cases, it may not be very easy to determine; but ever since I have seen Mr. Ware's first publication on diseases of the eyes, I have had such frequent and successful recourse to the *aqua camphorata*, as recommended by him, that I am inclined to give it a general preference to other remedies. One drachm of the *aqua camphorata* of Bate's dispensatory, to two ounces of water, will be a sufficient strength to begin with. A few drops should be instilled into the eyes, several times in the day, as well as the lids be frequently washed with it. It will sometimes be necessary to inject it into the eyes with a syringe, the lids

being so much swelled, as not to admit of its entrance by other means.

The topical remedies alluded to, in the place of the *aqua camphorata*, are *tinct. opii*, and the *unguentum hydrargyri nitratis*, which should be applied every night at going to rest; the former being dropped into the eye after the lids have been touched with the ointment. It is sometimes proper to lower and soften the ointment with a little fresh butter, or *ol. amygdal.* and to add a little camphor; or sometimes to use one somewhat weaker, with the addition of camphor, as follows:—

R. Unguenti hydrarg. nitratis ʒss; Unguenti cetacei ʒi; Gummi Camphor. gr. iij; Misce. Ft. unguentum.

The above tincture and ointment are usually a very speedy remedy for the sore eye induced by the small-pox and measles; as well as for the ophthalmia in scrofulous habits; a complaint under almost every other mode of treatment, very tedious of cure. In one instance the complaint was completely removed by the electric aura.

[If an infant be of a full and vigorous habit in this disease, and the eyelids much swollen, a leech may be applied to each eyelid, but not otherwise. It should be purged at intervals with the Hydrarg. Chloridum gr. i. to gr. ii. Pulv. Rhæi. The eyes should be syringed with a dilute solution of the Liq. Plumbi Diacetatis, or the solution of Alum or Sulphate of Zinc, as before mentioned, or the two latter combined. The extremity of a conical formed pewter or ivory syringe should be cautiously inserted between the edges of the eyelid,—the outer angle is perhaps preferable,—and the fluid thrown over the surface of the eye between it and the lid. According to the quantity of the matter it may be done more frequently; in general, however, twice a-day is sufficient, and it should be done by the medical attendant himself; the eyes should be bathed frequently with the lotion, but without pulling the eye about. Where there is much swelling of the palpebral conjunctiva, and it projects on separating the eyelids, we have seen no application so useful as the Nitrate of Silver, drawn lightly and carefully along it once a-day or every other day, the eye being kept uncovered, and the room darkened. In some

cases where the lotion is preferred warm, it may be warmed by placing some of it in a cup, in a basin of hot water. The great majority of these cases do well. H. D.]

Where this inflammation has not been properly treated from the beginning, the eye is sometimes exceedingly injured by it, so that even its coats will burst. At other times the cornea becomes much thickened, and the pupil more or less opake, by means of one or more specks which the inflammation has occasioned. It should be remarked, however, that we sometimes meet with an agreeable surprise at the decline of this formidable complaint, and find the eye much less injured than had been suspected at the time we were first able to get a sight of it. And at others, even where the cornea has burst, the aqueous humour has been restored, and been confined by the cicatrix, and the patient has recovered his sight. On the other hand, the cornea has sometimes been so greatly injured, or the iris contracted, that though the eye has not been sunk, the sight could not be restored by any means. In other instances a long and cautious use of escharotics, and paring off the thickened parts of the cornea, have afforded a certain degree of vision.

PSOROPHTHALMIA.

This complaint is so much of the nature of the former, but with more sensible affection of the lids, and less of the eye itself, that I need only to recommend for it the use of the like applications. In particular, slight scarifications of the lids in some instances, and the application of the *unguent. hydrarg. nitratis*, a few drops of laudanum being immediately afterwards instilled into the eye, will usually very soon have a good effect; but the cure is often a work of time.

VENEREAL OPHTHALMIA.

In permanent inflammations in young infants, I have been inclined to the opinion of the late Dr. Hunter, and others, who after having tried a variety of means, and assisted in consultation with different physicians, have been induced to

think that many of the very stubborn ophthalmias originate from a venereal taint, and can only be successfully treated by its specific remedy, in one form or other. This sentiment, however, requires a nice discrimination; and every practitioner will be very careful how he takes up such an opinion in particular instances; * however, it is right to observe, that if none of the means above recommended should produce a favourable change in eight or ten weeks, I believe nothing but that specific species of alterative will have any lasting effect.

Whenever a venereal taint actually exists, it is more safely treated by unction than in any other way; and infants would probably be cured much oftener than they are, if recourse were had to it in better time than it commonly is. If internal remedies, however, are, for any reason preferred, I have found none so efficacious, convenient, and safe, as the late Mr. Ward's white drop.

LEUCOMA, OR SPECK OF THE EYE.

This is often a consequence of long-continued ophthalmias, and is mentioned by Dr. Armstrong amongst the diseases of children, in his second edition. He directs a variety of things for the cure of it, which he says are often efficacious if the specks have been recently formed; but when of long standing, he has never seen any method successful. I shall only observe, that in a very great number of cases, a drop or two of the *aq. cupri ammon.*, instilled into the eye, two or three times a-day, has removed such specks in the course of a few months, and sometimes much sooner, without any other means. Should this fail, however, recourse may be had to a solution of *hydrargyri oxymurias*, at first only one grain being dissolved in four ounces of water, afterwards gradually increasing it to two grains, as the eye shall be found able

* The French physicians seem too much inclined to regard the purulent ophthalmia in this view, because it is a very common symptom, amongst others, truly venereal, in many infants in the Hôtel Dieu, l'Hospice de la Salpêtrière, Vaugirard, and des Enfants Trouvés; but when this species of ophthalmia appears alone, the case should not be hastily concluded to be venereal, however violent the ophthalmia may be.

to bear it, and the ointment of nitrated quicksilver be applied in the manner before recommended, and the like other remedies be continued as the disposition to inflammation may admit.

CATARACT, AND GUTTA SERENA.

Although these disorders are not very common in young children, they do, nevertheless, sometimes occur; and infants have even been born with a cataract in one or both eyes, or totally deprived of sight by the gutta serena. I shall therefore speak of these two diseases together, and the rather, because some of the remedies are here accommodated to both.

In the former of these, it is well known that the pupil appears white or pearl-coloured, instead of black; and in the latter has but little of an unnatural appearance, except that it is larger, and neither dilates nor contracts, when exposed to different degrees of light, or does so in a very small degree.

It would, indeed, ill become a man of the least character and experience to affect to have much to offer in the way of remedy for these dreadful complaints; the oldest and best practitioners never having pretended to be by any means uniformly successful in the treatment of them. From what I have known, however, they are not to be despaired of, and I should think it unpardonable not to hold out every occasion of good, or of comfort, in my power, however it may be, in cases wherein art has so generally failed.—*Valeat quantum valere potest.*

When a disposition to cataract and gutta serena has been suspected, I have known very considerable benefit obtained, and even the sight fully restored, by an alterative plan of calomel and cicuta; or by the long-continued use of an aromatic vapour, with *spirit. ammon. compos.** conveyed to the eyes by means of a tube properly adapted, and brushing the eyes and the adjacent parts, several times a-day, with soft and smooth brushes, properly constructed for the purpose.

* Half an ounce of the spirit with two ounces of water should be kept boiling over a lamp, and be made use of two or three times a-day.

Somewhat agreeable to this idea is the plan recommended by Mr. Ware, in his treatise on certain disorders of the eye; and which, like many other important discoveries, was the effect of accident. Upon this he happily improved, having succeeded, in several instances of incipient cataract, the consequence of external injuries, by exciting a transient inflammation. The application he has employed to this end has been ether, alone, or diluted with a third or fourth part of a weak solution of *hydrarg. oxymurias*, and sometimes mixed with *oleum succini*; which has, in some cases, been soon attended with a sensibly good effect, though in others, not till it has been repeated for several weeks. The success attending these cases, Mr. Ware adds, encourages him to hope for the like, where the opaque crystalline is either soft or fluid; in which state it usually is when the disorder is discovered in infants, either at the time of their birth, or shortly afterwards.

In the gutta serena, electricity has succeeded in several cases; and in one instance, a lady, whilst under such a course, suddenly recovered the perfect use of her eyes through a blow she accidentally received on the face, which produced a copious hæmorrhage from the nose. In imitation of this, the like discharge has been artificially procured by wounding the internal vessels of the nostrils; but without apparent good effect. Mr. Ware, in the above-mentioned treatise, confirms the favourable opinion of electricity, and adduces four instances of gutta serena cured by it, and as many by a medicated snuff, composed of ten grains of *hydrarg. vitriolat.* with about a drachm of the *pulvis asari comp.*, or in place of that, the powder of liquorice or of white sugar. The external use of the capsicum has likewise lately been attended with success. To this end one grain of cayenne pepper is to be infused in cold water, of which a few drops are to be instilled into the eyes three times a-day.

A curious remedy has been employed, with some success, by Professor Arnemann, of Gottingen; and any new remedy for such a disorder is an acquisition. This consists only in exciting vertigo by placing the patient in a whirling chair, with

his head at various distances from the centre. Not that the vertigo, it is observed, is a co-operating cause, though it is a favourable sign; but the strengthening and restoring tone to the eye, by exercising it with vertiginous, or rotatory motions of the head. Another remedy advised by this author is the exhibition of camphor, with and without belladonna: the former in doses from two to six grains, generally twice a-day, and the latter in doses of one or two grains, every day. These medicines, however, it is remarked, can be productive of good only in cases of real debility, arising from want of excitation, or in asthenic: while, on the contrary, in plethoric weakness they must necessarily be detrimental to the patient, and aggravate, rather than diminish, the symptoms of the disease. It should be observed, however, that where the belladonna can be dispensed with, it certainly ought, as it is a medicine not to be trifled with. The exhibition of calomel, together with the camphor, without the belladonna, has also been used, with much success, lately in London, especially while under a course of electricity.

I have little more to say in relation to the cure of the cataract by a surgical operation, either by extraction or depression, than that neither of them is advisable for infants unfortunately born with the disease, till they shall have attained to five or six years of age. Surgical readers will do well to consult the above-mentioned treatise for some excellent practical observations on the mode of extracting the opaque crystalline; as well as the observations of Dr. Reimarus,* adopted by Dr. Grasmayer, at Hamburg, on the use of the extract of the belladonna dissolved in water, previous to the operation; a few drops instilled into the eye, soon rendering it paralytic for a short time, with great dilatation of the pupil, whereby the eye is said to be rendered very manageable under the hand of the operator.

* Magasin Encyclopédique, 1797.

HORDEOLUM, THE STITHE, OR STYE.

The derivation of the word *stye* has often been the subject of inquiry. Horn Tooke traces it back to the Saxon *stigan*, ascendere, to rise up; and Archdeacon Nares agrees in this etymology; but he derives *stithe* from *tith*, hard, which quite agrees with the description of the disease, and is probably the real origin of both these words.—S. M.] *

The species of stithe here intended is sufficiently distinguished by the nosological term. It is a small inflamed tumour on the edge of the eye-lids, more commonly on the side towards the nose; but there are sometimes two or more at a time. It rises suddenly, as if from a cold, or blast, and in the end suppurates, forming matter of a thick, or cheesy consistence; often, indeed, not for several weeks, or even months, but sometimes much sooner. It is occasioned by an obstruction in the glands of the eye-lids; and the matter being enclosed in a hard cyst, the inflammation often returns in the same spot, till the cyst being destroyed by repeated suppurations, the cavity is afterwards filled up, and the complaint disappears.

All that is necessary to prevent the return of this temporary blemish, which greatly weakens the eye, is to imitate this process of nature. To this end, the little abscess should be touched, as soon as it breaks, with the *argentum nitratum*, cut to a point, (carefully avoiding doing injury to the eye,) which, by destroying the cyst, at once removes the complaint.

When these stithes are small, or hang by a very narrow base, they may safely be cut off, or tied very tight with a bit of silk, and when separated, touched with the caustic, as before mentioned.

DEAFNESS.

Children are frequently rendered deaf in different degrees, in one or both ears, by very slight colds, and at the expiration of a few days the hearing returns, without recourse to any means. It is, however, sometimes otherwise, and it becomes necessary to give a little purging physic; to keep the ears

[* See note to Furunculus. M. H.]

warm; and to confine the child to the house: and where this does not succeed, the complaint is not a little difficult to cure, unless when owing merely to indurated wax. In this case it will be proper to syringe the ears with warm water, to which should be added a tea-spoonful of lavender or honey-water; and a few drops of warmed oil of almonds may be instilled into the ears at going to bed. If these little means fail, warmer remedies should be made use of, such as the following, which, after properly syringing, will always be successful, if indurated wax be the only occasion of the complaint.

R. Olei amygd. \mathfrak{z} ss.; Ol. Succini rectific. gtt. xx; Spir. camphorat. \mathfrak{z} ss.; Tinct. Castor \mathfrak{z} j. Misce, et instill. guttas iv. vel. vj. calefact. aur. affect. nocte manequē.

Deafness, however, is sometimes owing to the want of a due secretion of wax, and is then much more difficult of cure. To promote this secretion, a few drops of the soap liniment, oil of almonds, and ether, and such like warm acoustics, should be tried and continued for some time, if they should not occasion much pain; and in all cases blisters may be applied behind the ears. The juice of onions, or a clove of garlic raw, or roasted, put into the ears, has sometimes restored the secretion, and removed the deafness; and in many cases a cure has been effected by electricity; yet in not a few instances all these means have failed. I have, however, fallen upon a method that has been universally successful by very simple means; consisting only in adapting an entire covering to the ear, made of an adhesive plaster, spread upon thin leather, so as completely to exclude the external air. The plaster should be renewed as often as it gets anywise loose, repeating it till the secretion of wax is in sufficient quantity, which seldom requires more than five or six weeks. But I am sorry to add, that although aurists have found it so difficult to restore this secretion, and have therefore conceived deafness to be often owing to the want of it, I have frequently found it nowise relieved by a return of the secretion. Possibly this may be owing to the cause of deafness lying in the auditory nerve, which is frequently the case; and here also electricity is par-

ticularly adapted, either through the meatus auditorius externus, or the Eustachian tube. Medicated snuffs, also, that induce gentle sneezing and discharges from the head, have sometimes been found surprisingly efficacious ; as hath likewise sea-bathing. Should these different methods fail, very little is to be expected from art. Nature, however, sometimes effects the cure ; and children, after having been deaf for several years, suddenly recover their hearing.

[The deafness of children is very often dependent upon that cachectic habit, which improper diet and a deranged condition of the stomach and bowels tend to produce. When this is the case, no plan succeeds so well in curing the complaint, as a combination of alteratives and daily aperients, with some such tonics as sarsaparilla, uva ursi, steel, or bark, as may be found requisite. And this plan is found useful, not only in the affections of the ears, but of the eyes of children. Parents are too apt to place reliance upon local applications to these parts, when the cure can only be effected by a regular exhibition of internal remedies.—S. M.]

ABSCESS WITHIN THE EAR.

It is not uncommon to meet with fetid discharges from the internal ear, either with or without inflammation, and external soreness ; but this is usually in children of one or more years old, rather than very young infants. If a little cooling physic, and wiping out the matter frequently should not remove the complaint, detersive injections should be used, and some one of the warm acoustics directed for deafness be afterwards dropped into the ear. The child should also be made to lie, as much as may be, on the affected side, that the discharge may have a free vent.

Should the quantity and feter of the matter increase, a blister must be kept open on the nape of the neck, a few purges of calomel be taken, and on the intermediate days, the *hydrargyrus cum sulphure*. But above all, in the worst cases, fumigations with the *hydrargyrus sulphuratus ruber*, and *hydrargyrus cum sulphure* mixed together, should be

made use of morning and evening ; from which I have seen the best effects when the discharge and fetor have been very great, and the ulcer of long standing.

EAR-ACHE.

It is needless to say much on this article. The pain is usually spasmodic, or if not, it is owing to taking cold in some part about the head, especially the teeth. In this case, a diaphoretic at going to bed, and a dose of cooling physic the next morning ; with a clove of garlic put into the ear, or a poultice of onions applied over it, will remove the pain, which is liable to recur, however, if accompanied with tooth-ache. If these fail, a blister may be applied behind the ear.

If it arise from spasm, the pain is often exceedingly severe, and is apt to return frequently ; being readily excited by every little cold, especially in some habits, tormenting young people at times for some years. The juice of rue is here a good remedy, or if this fail, a little laudanum added to the acoustic directed for deafness, and dropped warm into the ear.

TOOTH-ACHE.

I just glance at this painful complaint as at the former, which also frequently accompanies it at every age ; while some young children suffer by it greatly, during or after shedding their first teeth.

It may be proper to have them drawn, that is the well-known and most certain remedy ; but when that operation may be, on any account, objected to, palliatives will sometimes succeed ; such as a blister behind the ear, a clove of garlic, or a few drops of laudanum, made warm, and instilled into it, or a peppercorn bruised, put into a little linen bag, and wetted in hot brandy ; pounded ginger and white of egg, laid to the cheek ; a few drops of *caryophil. aromat.* applied on lint to the hollow tooth, or the smoke of tobacco forced into the ear, and especially the paste, or plug, contrived by the late Mr. Cockran, which the great good effects I have been witness

to will, I hope, be a sufficient apology for mentioning; especially as it is calculated to become a permanent remedy.

CANCERUM ORIS.

This is chiefly a complaint of children, is often talked of by nurses, and is usually as trifling as any. It has, indeed, been said by some writers to prevail very much in England and Ireland, and to be often a serious complaint. Such a disorder, if it really be canker, may be treated as under the next article; but the common canker is rarely troublesome to cure.

It sometimes makes its appearance in the month, at others, about the time of teething; and frequently at the age of six or seven years, when children are shedding their first teeth, and the second are making their way through the gums, which are covered with little foul sores, extending sometimes to the inside of the lips and cheeks. It seldom requires more attention than was mentioned under the head dentition; any mild, astringent application, and keeping the body open, usually effecting a cure; or if it does not, and the complaint makes its appearance at the time of teething, it will generally go away as soon as the teeth are come through.

The worst species of this complaint that I have happened to see, has been during the second period of dentition, when a child has been shedding a number of teeth together, leaving the rotten stumps behind, which have been neglected to be drawn out. The whole gums will then sometimes be spongy, or dissolve into foul, spreading ulcers; and small apertures will be formed, communicating from one part to another, accompanied with an oozing of a fetid, and some purulent discharge.

If the stumps of the decayed teeth can be got at, they ought to be extracted; after which, some such applications as the following will soon brace the loose gums, and heal up the ulcers, however foul, or numerous they may be.

R.—Bol. armen., Gum myrrhæ, Cort. Peruv. pulv., Potassæ, bitart aa ʒi. Mel. rosæ q. s. Misce, Ft. Pasta.

R.—Aq. calcis ℥vij. Tinct. Myrrhæ, Mel. rosæ, āā ℥ss. Ft. Mistura.

The gums should be touched several times in the day, especially after meals, and at going to bed, with the above paste, and the mouth washed occasionally with the mixture.

If no considerable change for the better should take place in a week or ten days, a drachm of alum may be substituted in the place of one of the astringent powders; and instead of the above mixture, one acidulated with as much of the muriatic acid as the parts will endure, occasionally made stronger, till some amendment be perceived; the bowels being, in the mean time, kept properly open. If internal remedies be thought necessary, Peruvian bark, sarsaparilla, and mineral acids, will be the most eligible; and the child may be kept on a diet of milk and vegetables.

In this and the following disease, which are presumed to be identical, the chlorate of potash is highly eulogised by Dr. Hunt, who says—"The quantity of salt that I have been in the habit of prescribing, varies from twenty to sixty grains, according to the age of the child, in divided doses, in twenty-four hours, dissolved in water; the beneficial effect is often observed the following day, almost always on the second; the disagreeable foetor soon lessens, the sores put on a healthy reparative action, the dribbling of saliva diminishes, and if there is merely ulceration, it very speedily heals; if there is an eschar it soon separates, and the sore granulates kindly. In no other disease did I ever see the good effects of any medicine so soon manifested."—It is advisable to give an occasional aperient during the treatment.

GANGRENOUS EROSION OF THE CHEEKS.

This complaint has some resemblance to the canker, though it is much more dangerous, and is not a mere local disease. I have seen no clear account of it in any late writer but Mr. Dease, of Dublin, who seems to have met with the disorder pretty frequently, and describes it very accurately in his tract

on the diseases of lying-in women, &c., to which I am very much indebted on this occasion. Mr. Hurlock, indeed, in his treatise on dentition, printed in 1747, mentions a complaint that seems to be of that kind, though he does not appear to be well acquainted with it.

It usually attacks children from two to six or eight years of age, especially the unhealthy, and such as have been subject to worms. The whole body often feels cold on the approach of the disease: after which a black spot appears on one of the cheeks or lips, and spreads fast; but without any marks of inflammation. Oftentimes the whole side of the face is eaten away, together with the lip, so that the bare jawbone and inside of the mouth appear. In the end, the entire of the lower jaw falls down on the breast, and the whole side of the face is dissolved into a putrid mass; a colliquative diarrhœa taking place from the offensive matter that is continually swallowed, especially by very young children.

In the cure, internal as well as external remedies are required; but only such as correct putrescency, and support the strength, seem to be of any use. A few drops of the muriatic acid, therefore, taken inwardly, in the *infus. rosæ*, or in the child's drink; the saline draught in effervescence; and in the end, the bark, in doses suited to the age, with good broths, jellies, and wine, are the proper remedies. The parts should be washed, and likewise injected with muriatic acid in chamomile, or sage tea, and afterwards dressed with the acid mixed with honey of roses, a carrot poultice being applied over all. The child should in the mean time be gently purged with magnesia or rhubarb, to carry down the putrid matters it may have swallowed. By this treatment, Mr. Dease informs us, he has recovered every patient except one, since he had recourse to this plan, which the world is much indebted to him for making public, though fortunately this complaint does not appear to be by any means a common one.*

[* See a paper by Dr. Marshall Hall, in the *Ed. Med. and Surg. Journ.* xv. 547.]

GANGRENOUS AFFECTION OF THE PUDENDUM.

[An account of the disease by Mr. Kinder Wood, will be found in the *Medico Chirurgical Transactions*, vol. vii. p. 84.]

“The commencement of this affection is attended with chilliness succeeded by heat; slight pain in the head, dulness, nausea, loss of appetite and thirst; the tongue has a clay-coloured deposit; the bowels are torpid, and the patient is languid, inert, and listless. These symptoms precede the affection of the pudendum about three days. The patients first call the attention of parents more particularly to the seat of the disease by complaints of pain in voiding urine, or when too young this is observed by the cries and struggles of the child during the act of emptying the bladder. When the genital organs are examined, one or both labia are found inflamed and enlarged, the inflammation is of a dark tint, and extends internally over the clitoris, nymphæ and hymen; the pain in voiding the urine may induce a supposition that the inflammation extends into the urethra, and a thin secretion, which at this period may be observed coming from these parts, renders it not improbable that the lower part of the vagina may be affected.

“From this period of the formation of the inflammation, so rapid is the progress to ulceration, that scarcely twenty-four hours elapse before a number of small vesications forming within the labia, as well as externally, burst and form so many open surfaces, which, spreading quickly into each other, form larger ulcers; this was the progress in one case, in the other the skin opened without any previous vesication. The thin discharge which the inner membrane secretes, is now mixed with the secretions from the ulcerations, and is dark coloured, peculiarly offensive, and copious, irritating the adjacent parts, and contributing to extend the disease along the perineum to the anus, and to the inner part of the top of the thigh, contiguous to the labia. I have also seen the inflammation spread over the mons veneris, and be succeeded by

deep ulcerations progressively extending as long as life continued.

"The pulse is quick and irritable after the inflammation commences, and as the ulceration extends, the face becomes of a peculiar pallid hue, the skin having a very singular whiteness, which I have never seen absent after the ulcerations had formed. As the bowels are slow at this period, the opening remedies uniformly bring away dark, slimy, and offensive stools, and in two or three cases I have seen aphthæ spread around the anus, and over the perineum."—M.H.]

INDURATION OF THE BREASTS.

It would be improper to pass over the slightest affection that has on any occasion exceedingly alarmed parents, and sometimes perplexed the younger part of the profession. Of this kind are affections of the breasts in females, previously to, or about the time they are beginning to enlarge. At this period they sometimes become very painful; and, upon examination, a hardness and swelling are discovered, and in some instances, sharp points may be felt, which are very painful when pressed. The hardness is deep seated, around and behind the nipple, and is sometimes loose, at others somewhat fixed, and attended with severe lancinating pains, which have given rise to disagreeable suspicions in regard to the probable nature of the complaint; and would, indeed, at a more advanced age, claim serious attention. When happening in families disposed to scrofula, that disorder is naturally suspected, and sometimes a scirrhus has been apprehended. In some instances only one of the breasts is affected, and after some months the other, or sometimes both nearly at the same time.

A variety of alterative medicines, aided by topical applications, have been administered in different instances, and continued for several months. These have sometimes taken away the pain, reduced the tumour, and diminished the hardness; but have, in no instance, entirely removed the complaint. Yet no evil consequence, in any instance under my eye, has ever ensued in patients at the above-mentioned age; nor have I

heard of any from other practitioners, though it has sometimes been seriously apprehended.

The result of the whole has shown, that the remote cause of the complaint has originated in an irritability of habit, in connexion with that distention of the parts, which, at a certain age, nature always promotes.

The design of this chapter being to hold forth encouragement, from the probable harmless nature of the complaint, it were needless to point out the means, that, on different occasions, have been sometimes unnecessarily employed. I shall remark only, that keeping the body open and cool, with every other attention to the general health, must in every instance be proper; and should the pain be very great, a poultice of bread and milk, or of *aq. lithargyri acet. comp.* may be applied; and a few grains of Dover's powder be taken for a few nights on going to bed. In the treatment of this complaint, "when a hardness and swelling is discovered, attended with severe lancinating pains," it seems requisite to apply leeches, from which evident relief has on various occasions been obtained. In addition to this, lotions with *liq. ammon. acet.*, water and laudanum, either cold or tepid, as circumstances may require, may be recommended, and are generally useful. From ten to twenty grains of carbonate of soda, combined with some mild aperient, may likewise be directed two or three times a day,—S. M.

ABSCESS IN THE PUBIC REGION.

Children, though less liable to this disorder than adult persons, are sometimes attacked by it at an early age. It commonly arises from falls, or blows received on the part, or from lying on the grass, and other similar occasions of a cold in the bowels. It is always attended with, and sometimes preceded by, alvine complaints, and not unfrequently by the true cholera. In either case, there is always a pretty early appearance of tumour near, or upon the regio pubis, accompanied with great tenderness and pain, especially upon pressure.

The intentions of cure are directed to the pain, fever, and

state of the bowels. To these ends the antiphlogistic plan is to be pursued, in order, if possible, to prevent suppuration. Therefore, soft opening medicines are required, such as castor oil, infusion of senna with oil of almond and manna, and such like; with frequent clysters, and afterwards opiates, and saline draughts, as the degree of pain and fever may demand. The part affected should be fomented externally with the *decoct. papav. albi*; leeches should be applied once or more, and afterwards a blister, if no relief be obtained, and the external tumour be not in the mean time increased. But if the parts become more swollen, a large bread and milk poultice should be applied, and changed two or three times every twenty-four hours; and the matter let out as soon as may be. The suppurations being between the muscles and the peritoneum, there will not be much discolouration of the skin, as in the case when matter is formed in the cellular or adipose membrane, above the muscles. Such a change, therefore, must not be waited for; but an opening made as soon as any fluctuation can be perceived, lest the matter should make its way into the abdomen, or produce sloughs and a foul ulcer. After the matter is let out, no other application is usually required than the same kind of soft poultice. The bowels must likewise be kept open by the gentle laxatives before mentioned, and the diet be very light, and easy of digestion; which should be continued for some time.

PSOAS, OR LUMBAR ABSCESS.

Frequently as this disorder takes place in adults, it is as often met with in younger subjects, and even such as are only four or five years of age; and must therefore be ranked among the diseases of childhood.

It is a true chronic inflammation, and, like the last-mentioned complaint, is often occasioned by bruises, strains, or lying on damp ground; and is not uncommonly connected with a scrofulous taint of the habit. The inflammatory symptoms being rarely severe, suppuration takes place slowly, and many months elapse before the matter can be felt externally.

The abscess sometimes points high up about the loins, hip, or groin, and at others, above the middle, and on the inside of the thigh: in the most benign cases it frequently bursts in the groin. It is, in any case, a very dreadful disease, and is noticed here for the sake of pointing out to young practitioners the first symptoms of this insidious complaint, and marking the outlines of a practice which has been proved the oftenest successful.

A slight lameness, and shortening of one of the legs, is usually the first symptom. In a little time the thigh is observed to be bent forward and upwards, which gives an appearance of depression to the glutæi muscles. But its most characteristic mark, in its early stage, is a sensation of weakness in the loins, with a tenderness about the origin of the psoas muscle, manifest upon a careful examination of the parts.

The first indication is to procure a resolution, if possible, upon the approach of these first symptoms, and before those of a hectic nature supervene; but unfortunately, they are too often overlooked, or mistaken in the beginning.

With a view to a resolution of the inflammation, recourse should be had to bleeding by leeches and cupping; by blisters, issues, and setons; by emetics, and purging with calomel; by the warm bath, a supine posture, and low diet; and sometimes by a caustic, or quicklime mixed with honey, applied near the lumbar vertebræ; but above all, by electricity, a stimulus which in all affections of the joints, previous to the formation of pus, is, perhaps, the most successful.

Should these means fail, or advice be sought for too late to expect any thing from them, of no less consequence is the treatment after the matter is formed, which should be evacuated by an artificial opening, as early as possible, and by a very small aperture. If the abscess be large, one or more setons may be employed, in order to prevent the matter being too suddenly evacuated, as well as to keep up a beneficial stimulus, to induce the cavity to fill up. By these means, (which contain considerable improvement upon the ancient practice,) several very severe and unpromising cases have been

recovered; but it would be unjust not to notice, that a more important improvement has been made by Mr. Abernethy, which is peculiarly adapted to very large collections of matter, and seems likely to render this disease, for ages usually fatal, far less untractable.

The principal circumstances in this plan, is the making a small opening in such a manner and oblique direction, as to be capable of being closed again after having given vent to the present collection of pus; and repeating the operation at such intervals, and as often as shall be necessary. But for further information the reader is referred to the tract itself; it being both beside my purpose to enlarge, and it would be unjust to add any thing that might induce him to overlook the accurate account with which Mr. Abernethy has favoured the public.

Nevertheless, as it is certainly the duty of every writer to offer what he accounts the best information, it becomes me to observe, that Mr. Abernethy's reasons for emptying the cyst both at first, and on every subsequent opening, are, at least, controvertible. It has been thought by others to be an improvement to let out only a part of the matter in very large collections of it. And I have myself known some, and heard upon good authority of other cases, in which the latter method seems to have the preference; none of the evils from the distension of the cyst, which Mr. Abernethy suspected, having taken place.

Mr. Abernethy, however, as it appears from a more recent publication, retains his opinion as the result of experience, and is now not anxious about the obliquity of the aperture. He, nevertheless, closes it carefully, and assists its healing, and makes a fresh puncture as often as the abscess shall fill to a certain degree.

This sentiment is submitted to the public upon Mr. Abernethy's authority, having had no reason myself for altering my opinion; the only case I have seen since my former edition, in which the whole of the matter was evacuated, did not succeed.

Mr. Abernethy is further of opinion, that opium adminis-

tered at regular intervals, and in doses suited to the occasion, has been very useful in mitigating the pain and irritability of the abscess, and in consequence, the corresponding hectic fever.

When the abscess has been some time opened, the diet should be changed for one more cordial and nourishing; and the bark, steel, or vitriol, be administered, and the patient enjoy a pure air, and take such gentle exercise as his situation will admit of without an increase of pain.

I have only to add, that nature will endeavour to relieve herself, even in this dreadful disease, by absorbing the pus, very many months after a large quantity has been formed. A lady who was long confined to the house, and chiefly to her bed, through extreme weakness and the weight of the limb, has found the size of the tumour very considerably diminished; the appetite greatly returned; and the use of the limb so far restored, that she is able to walk abroad, and partake of the ordinary comforts of convalescents, who are yet in a weak state.—This was the statement of the case in a former edition; to which I have the pleasure of adding, that it is now some years since she was first able to take this exercise; though she has not yet recovered her strength.

MORBUS COXARIUS.

A very similar disease to the above, and equally dangerous, is the morbus coxarius, or disease of the hip-joint; a complaint differing only in the precise seat of the disease. The swelling and pain are here, indeed, more circumscribed, and the abscess always gives way near the region of the joint. The preceding symptoms, however, much resemble those above mentioned. But the equivocal nature of the first appearances, and the difficulty of ascertaining the probable degree of subsequent injury, are such as will not allow of a discussion in detail in a work of this sort.

I shall observe, however, that a degree of lameness is frequently the first thing noticed; and a short time afterwards, both the thigh and the calf of the leg become sensibly les-

sened. The patient also does not stand equally on both legs, and the affected one projects outwards from the body; and, in the end, the thigh becomes shortened. It is generally attended with a severe pain in the knee, and very early an uneasiness in moving the head of the thigh-bone in its socket. It occurs from infancy to manhood, and often derives its origin from trifling accidents. It is frequently at its first appearance mistaken for other disorders; accordingly, the paleness, languor, and listlessness that follow the first symptoms are often attributed to worms, and the tumour itself considered simply as scrofulous; whence an erroneous practice is frequently adopted. It is, moreover, mistaken for rheumatism and sciatica in adults, and in children for indolence and trivial accidents.

On the head of treatment I shall only observe, that in a view to procuring a resolution, which is the first intention, the means can differ but little from those prescribed for the foregoing complaint: and we have the authority of the late Mr. Pott * for expecting considerable benefit from issues or setons, applied in the manner directed for the palsy of the lower extremities. Should an abscess, nevertheless, be formed, its after treatment must vary considerably according to the degree of injury of the joint, and adjacent parts. Nothing, however, will contribute more to the cure than long and strict rest of the limb.†

ABSCESS UNDER THE FASCIA OF THE THIGH.

The nature of this deposit is so much of a kind with the two preceding ones, as well as so much less dangerous, that it would be needless in this work to do much more than mention it in its place.

Mr. Abernethy is of opinion, that the whole of the matter should, in this case also, be evacuated, and by a larger opening than for the lumbar abscess; and does not, therefore, advise a

* See a short account of his life by Mr. Earle.

† For a full account of these abscesses readers are referred to a Treatise by Mr. E. Ford.

reunion of the lips of the orifice. I have, however, seen the method which I have noticed as successful in the former, equally so in this abscess; and from the result in one very bad case, am disposed to think there may be considerable advantages in closing the aperture, and making fresh punctures as the matter shall collect.

WHITE SWELLING OF THE JOINTS.

I shall be equally brief also on this article, the disease being well known to every surgeon; and my intention in naming it being only to mention, from experience, a few remedies that have been found successful in young subjects, if had recourse to in good time, and before matter has been formed. Such are the repeated application of eight or more leeches, and afterwards small blisters to the joint; gentle frictions of the part; two or three vomits a-week; with entire rest of the limb: and in the end, sea-bathing, especially if the patient be of a scrofulous habit. It has been said that a poultice of boiled turnips, with a lump of hog's lard, applied twice a-day, has, in several incipient cases, entirely removed the complaint. And in a few instances that I have known, electricity has had an immediate, and wonderfully good effect, even where the joint has been considerably enlarged, the pain very great, and the child incapable of straightening the limb.

PARALYSIS OF THE LOWER EXTREMITIES WITH CURVATURE OF THE SPINE.

This complaint has been of late years so thoroughly announced, that it should seem unnecessary for most readers to enter into a minute detail of it after the accurate description given by the late Mr. Pott, whose early account and judicious treatment of this dreadful disease has added lustre to the reputation acquired by his former publications. Some late observations have, indeed, seemed to detract both from his merit and expected success; I can, nevertheless, from my own

experience, vouch for the great utility of the plan in this morbid deformity.

It will be proper, however, carefully to distinguish it from the simple curvature of the spine, in which a greater number of vertebræ is concerned, and the legs are not peculiarly affected; as well as from a complaint presently to be noticed, under the name of debility of the lower extremities, in which there is no manifest change of figure in the spine.

The palsy of the lower extremities is certainly confined to no age, and being at first very frequently mistaken in young children for the trifling effect of some fall or sprain, is intitled to peculiar notice in this work. I have never met with it, indeed, where it has not been preceded by some fall or violent exertion, though, as Mr. Pott has observed, such supposed accidents are seldom much noticed, previous to the debility taking place; it is, however, probable there may be some predisposing cause, without which no common strain would induce so much mischief in a part continually exposed to accidents.

The curvature is generally in the neck or back, though sometimes in the upper part of the loins, and varies in extent and degree according to the number of vertebræ that may be affected. The first symptom noticed by children of an age capable of expressing their feelings, is an increased sensibility, and irregular twitches in the muscles of the thighs. This is succeeded by a dislike to motion, especially to moving briskly; the patient on such occasions finding himself likely to fall, his legs getting entangled through their weakness, and a disposition to cross each other, in his attempts to step forward. Soon after this, he perceives himself unable to stand upright long together, and that the legs and thighs have lost much of their natural sensibility. Matters seldom continue long in this state, the weakness increasing, patients lose more and more the use of their lower extremities, till some are unable to move them at all, even in bed: and these advances of the disease are said to be more rapid in adults than in infants. In the latter, I have particularly remarked that rigidity of the ankles noticed by Mr. Pott, by which the toes are pointed

downwards, so that the heels cannot be brought to touch the ground.

As my intention is only briefly to point out the disease, and the proper means of relief, it is not of importance to enter into a further detail of the progress of this disorder, and of other complaints which are induced by it, whenever the original disease has been long neglected.

The obvious remedy is that first happily suggested by Mr. Pott, viz., a large issue or seton placed on each side the curve, at such a distance as may prevent their bursting into one. Where the curvature comprehends three or more vertebræ, the seton may be preferable to an issue; but if the latter be on any account elected, I should advise its being made by the knife rather than a caustic; not only 'as being less painful, but also for the very effect Mr. Pott has disapproved of, I mean the consequent inflammation before there has been time for suppuration to take place. It may indeed be doubted, whether the benefit derived from the issue may not arise rather from the inflammation and stimulus produced on the surface, than from the discharge; to which, nevertheless, Mr. Pott solely attributes the cure.* In a very unpromising case, however, of an infant ten months old, a very sensible relief was afforded as soon as the inflammation took place and be-

* It has been a common idea, that the discharge furnished by an ulcerated surface is the source of all the benefit that may be derived from abscesses, unless blistered surfaces be an exception; in regard to which, physicians have usually considered the stimulus produced by the cantharides as the chief mean of benefit, especially in cases of great local pain and inflammation. It is, indeed, matter of some surprise that thinking men have not more generally adopted the like idea in regard to other inflamed surfaces, whether induced by natural or artificial means. It should surely seem, that that state of the system, or of the parts, by which suppuration is induced, is more likely to be the occasion of benefit, than the discharge of a large portion of the richest animal juices, which is but the consequence of the other. Thus, in most critical abscesses, the fever is found to abate as soon as the external inflammation takes place, and the patient, instead of being afterwards benefited by a copious discharge, is not unfrequently hurried by it into a fatal marasmus, when the abscess has been large, or improperly seated. There may be other instances, indeed, in which the suppuration, and even the great quantity of the discharge, may be beneficial to the system; but it is probable, that this is not in general the case, and much less in the present instance, which is attended with symptoms of general debility.

fore any suppuration appeared; and though the child had been some months a cripple, with loss of health and appetite, unable to support its head, and the sternum very much distorted, the relief was so great in one week after the incisions were made, as left no room to doubt of a perfect recovery; which accordingly took place a short time afterwards, without any deformity remaining. Had Mr. Pott advanced any other reasons for the preference given to the caustic, or merely asserted such preference, I should readily have submitted to the great experience he has had in this dreadful complaint; but though I may very possibly be mistaken in my reasoning, it appeared a duty to state it, as well as to notice this instance in point, in a disease of much importance.

The issues should be kept open till the patient perfectly recovers the use of his legs, or even a-while longer: at least one issue, which ought not to be dried up till the patient can walk firmly alone, and shall have recovered all the height which the may have lost in consequence of that stooping which the disorder had induced.

In addition to the use of these means, Mr. Pott had suggested those of cold bathing, frictions, the bark, and such like; but I have myself had no experience of them, nor does it seem very probable that such auxiliaries are likely to avail much when the issues shall fail. After the recovery, however, if the patient is of a scrofulous habit, sea-bathing is peculiarly indicated.

The moxa has been successfully made use of in one instance, by Mr. Gimes, after the caustic, as directed by Mr. Pott, is said to have failed. But as the burning was several times repeated, and the recovery appears to have been unusually slow, it is not very certain but that a repetition of the caustic might have proved equally beneficial.

The assistance of the stay contrived by Jones, and since made by Bowley and Keble, has been recommended upon the authority of Sir James Earle; and a trial of it, under proper cautions, may be made whenever the issues may fail, or the cure seems to be at a stand.

DEBILITY OF THE LOWER EXTREMITIES.

This disorder either is not noticed by any medical writer within the compass of my reading, or is not so described as to identify the disease here intended. It is not a common disorder anywhere, I believe, and seems to occur seldomer in London than in other parts of the kingdom. Nor am I enough acquainted with it to be fully satisfied, either in regard to the true cause, or seat of the disease, either from my own observation, or that of others, with whom I have corresponded, except in the instance of teething, or of foul bowels; and I have not myself had any opportunity of examining the body of any child who has died of this complaint. I shall therefore only describe its symptoms, and mention the several means attempted for its cure, in order to induce other practitioners to pay attention to it.

If it arises from teething or foul bowels, the usual remedies should be employed; and have always effected a cure. But the complaint as often seems to arise from debility, and usually attacks children previously reduced by fever; seldom those under one, or more than four or five years old. It is then a chronical complaint, and not attended with any affection of the urinary bladder, nor with pain, fever, or any manifest disease; so that the first thing observed is a debility of the lower extremities, which gradually become more infirm, and after a few weeks are unable to support the body. If there be no signs of worms, (as is here supposed,) nor other foulness of the bowels, mercurial purges seem to be of no use; neither is the bark, nor hot nor cold-bathing. Blisters, or caustics on the os sacrum, and the great trochanter, and volatile and stimulating applications, with friction with mustard and oatmeal, dry, to the spine, legs, and thighs, have been chiefly depended upon; though there is no appearance of an enlargement of any of the vertebræ, nor of suppuration in the external parts, and therefore no resemblance to the inflammation of the intervertebral cartilages, the psoas abscess, nor the morbus coxaris of De Häen.

When only one of the lower extremities has been affected,

the above means, in two instances out of five or six, entirely removed the complaint; but when both have been paralytic, nothing has seemed to do any good but irons to the legs, for the support of the limbs, and enabling the patient to walk.

[It may be doubted whether irons to the legs can ever be useful in a state of paralysis of the lower extremities. If the limbs are paralytic, how are irons to the legs to enable the patient to walk?—S.M.]

At the end of four or five years, some have by this means got better in proportion as they have acquired general strength: but even some of these have been disposed to fall afterwards into pulmonary consumption, where the debility has not been entirely removed. On this account it may be suspected, that the complaint is sometimes owing to scrofula: and I have been very lately informed by a gentleman of character in the country, that he has seen one instance of a paralysis, or debility of this kind, in which, upon opening the body after death, the internal surface of the lower vertebræ lumborum was found carious, though there was no abscess of the psoas muscle, nor external tumour on the back, nor loins.

DISCOLOURATION, ACCOMPANIED WITH DEBILITY OF THE LIMBS.

Attendant upon debility of the lower extremities, there is sometimes a discolouration, equally distinct from those already mentioned, and another yet to be noticed.

Children so affected have gone off their feet, as it is called, or dragged them only very feebly, after having been able to walk stoutly for some time. They have become in every respect weak and languid; their head has grown large, and their limbs become emaciated, but do not feel cold to the touch, though of a deep leaden-blue colour from the fingers and toes to the elbows and knees, with the face almost equally discoloured, and like that of adults in a fit of asthma. A fall, or such like accident, has sometimes been suspected as the cause of these symptoms, but this is unsupported by any appearance on the vertebræ, or other parts.

The bark and cordials have been made trial of without any

advantage; and cold bathing has seemed to be prejudicial. The application of leeches to the livid parts, friction, spirituous and volatile embrocations, and blisters; repeated electricity; tepid sea-bathing; steel, exercise, and a generous diet, are the means I have hitherto directed, after purging with calomel; but I am not able to state their certain effects, most of the cases I have been consulted for residing out of town.

In several instances, a discolouration of this kind, appearing only at times, and recurring again, during many months, attended with cough and occasional difficulty of breathing, has disappeared totally, as the children have acquired general strength and good health, without any manifest advantage from the means that have been used.

CURVATURE OF THE BONES FROM WEAKNESS.

Crookedness of the bones, particularly those of the lower extremities, has been mentioned as a common consequence of rickets, and may claim a transitory notice.

The principal inquiry in the treatment of deformities of this kind, respects the use of irons for the support of the limbs, whenever the distortion happens to be considerable. The propriety of this assistance has, indeed, been doubted by some practitioners, as well as their unpleasant appearance objected to by parents; who have, therefore, been inclined rather to trust only to cold-bathing. Friend, however, as I am to the latter, I may venture to say from experience, that it is likely to be prejudicial at the time it is often had recourse to; for by strengthening the system, it rather serves to confirm the crookedness which the bones have already contracted. It is an advantage, on the other hand, that the bones remain soft and yielding as long as the curvature is considerable, if so be the pressure of the superior parts be at the same time duly counteracted. To support the limbs, therefore, with irons, as long as the softness of the bones disposes them to yield under the weight of the body, is certainly a rational intention, and has been very beneficial in numberless instances. This end

obtained, the bones being still lengthening as the child grows up, they naturally incline to become straight; and at this time the cold-bath and other tonics are properly indicated, and will co-operate in the cure of the complaint. The only care required is, that the irons be made as light as possible, and be properly adapted, and that they be lengthened as often as may be necessary. It is possibly for want of due attention to this last particular, that irons have in some instances been really found to do harm; the reason for which must be obvious to every one.

When a curvature takes place in the spine (without any disease of the vertebræ or cartilages) the like method should be taken. Proper instruments to support the head and upper parts of the body have been contrived by different artists, but those first made by Jones, and now by Kebble, appear to be the best. There is, indeed, a slight disposition to this curvature in some children of a scrofulous habit, that does not require so inconvenient an instrument; and for which the stays made by Laurie and Holmes, in Bartholomew Close, may therefore be preferable.*

But if the injury extend to the hip, and contiguous bones, it will not be manifest at the time; and when discovered, can be benefited only by the cold bath, and other general remedies. If this distortion should be considerable, it may indeed become a source of manifold evils in females, as will be noticed in another place.

Should the bones of the arm be curved, either by accident or disease, in this soft state, rollers and pasteboard splints, properly applied, will be sufficient to support, and restore them to their natural form.

PARONYCHIA.

This complaint occurs in very different degrees, but is introduced here principally in a view to the most benign; many

* Of the use of irons and stays to counteract any kind of curvature of the bones, my experience does not allow me to speak highly. Though sometimes useful, they have on many occasions appeared rather to do harm.—S. M.

young people being very subject to a mild species of this complaint, which being perfectly superficial, is not improperly termed the cutaneous whitlow, and will attack the ends of the fingers several times in a year, without any previous injury of the part. The subject is noticed, therefore, chiefly with a design of recommending a prophylactic which I have frequently seen successful. This consists only in bathing the fingers several times a day, in the following mixture, the moment that a sense of any preternatural heat, or pain, shall be felt.

R. — *Misturæ camphoratæ* ℥iv. *Liq. plumb. diacet.* ℥ij. *Tinct. opii* ℥ss. *Misceantur.*

In the malignant, or deep seated whitlow, doubtless the best method is to make an early opening down to the bone, which will occasion the patient much less pain than allowing the matter gradually to make its own way to the surface; which is likewise always attended with much mischief to the parts, and sometimes even gangrene.

I shall only add that, in the commencement of the tumour and pain, nothing can be more improper than the recourse so commonly had to a bread and milk poultice; instead of which, where poultices are required, those made with the water of acetated litharge are decidedly preferable, and should be applied only very moderately warm.

FURUNCULUS.

The common boil only is intended here; and is noticed from its frequency in young people towards the time of puberty, who are sometimes vexed with a succession of them. This is the true phlegmonic inflammation, and is therefore most acutely painful, the skin of a deep red colour before the suppuration is complete. Though oftentimes hurtful in older subjects, they are, however, justly accounted salutary in others, and do harm only when repelled, or hastily dried up. If a poultice of bread and milk, therefore, be applied from the first, (if the boil be in a convenient part, otherwise a gum-plaster,) and the abscess dressed with any warm digestive as soon as the skin

gives way, the slough, which the boil always forms, will soon be thrown off. It is sometimes for the want of this, that another boil forms in the neighbouring parts, or the child is teased with sore eyes, or some humour, as it is termed, on the skin.

Two or three doses of purging physic may be taken, at proper intervals, after the boil is healed.

[Furunculus, paronychia, and hordeolum, alike indicate derangement of the digestion: mild rhubarb aperients, with the *hydrargyrum cum cretâ*, followed by tonics, are at once the preventives and remedies.—M. H.]

PERNIONES.

This is a complaint so well known, that it can need no description. It is generally owing to the circulation of the blood in the minute vessels of the extremities being checked, by a child having been long exposed to cold or wet, and afterwards running to the fire, instead of recovering the natural heat by general exercise, and friction of the parts affected. If the injury be exceedingly great, as it sometimes is, when a person has lain for several hours in the snow, the circulation cannot always be restored, and some parts actually mortify. To prevent this, if possible, instead of bringing the person near a fire, he should be immediately stripped, and well rubbed all over, especially the parts most affected, with snow, and afterwards with salt and water, and be then put into bed. If neither snow nor ice be to be had, cold water should be made use of, or flannel sprinkled with spirit. If the parts be turned black, which they often are when they are what is called frost-bitten, the patient, especially if a young child, should be confined to the bed as long as the weather is severe, and the parts shall continue discoloured. But my intention is to treat chiefly of slighter attacks; on the first appearance of which, known by the heat, itching, redness, and swelling of the heels, toes, or fingers, the parts may be well rubbed with a soft brush, or soaked in smiths' forge water, and afterwards rubbed with mustard and brandy, soft soap, or salt

and onions; or they may be embrocated with the *liniment. saponis*, or *spirit. camphoratus*, to two ounces of which may be added a tea-spoonful of the *liquor plumbi*. But I have for some years experienced the good effects of far simpler means than any of these, which I have hitherto never found equalled by any of the warmer remedies alone. It is the *cerat. sperm. ceti* spread on a large piece of thick lint, or the *emplast. saponis* on cloth, to be applied as soon as the extremities begin to itch, or become painful; or if this should not very soon be of use, both embrocating, and covering the parts with compresses of flannel wrung out of the *liquor ammoniæ acetatis*, which should be continually preserved moist.

Some children are disposed to have chilblains every winter; as a preservative against which, if it be the hands that are liable to be affected, warm leather gloves should be worn, (avoiding woollen, which in these cases is unfriendly to the skin;) and above all, wearing for a few hours in the day, or night, and especially when abroad in the cold, oiled-silk gloves, which is one of the best preventives both of chilblains and of chopped hands that has been hitherto known. But if the feet are usually the affected parts, the heels only may be covered by a piece of washing-leather, and over this a piece of oiled-silk, secured round the insteps, and worn day and night during the cold months: these should be taken off only for the purpose of washing them, and rubbing the parts with the brush or liniments, as mentioned above.

When the swellings are broken, it is common to dress the sores only with a little cerate, and to wait for the return of warm weather, when they usually heal of themselves; but by this means they often remain bad through all the winter, and when large, are sometimes not well till the summer is very far advanced; and I have even seen them remain very bad both in children and grown people at the end of September.

After having attended great numbers in this complaint, I am satisfied this kind of sore requires applications somewhat more invigorating, being a species of gangrene; and though it will not always endure very warm digestives like many other ulcers, yet when the chilblains are pretty large, a portion of some digestive joined with the cerate is very friendly to them.

And I have known some sores, though very small, which had remained in a very obstinate and tedious state long after the breaking up of a hard frost, whilst they had been dressed only with cerate, or other mild or drying applications as they are called, begin to heal immediately upon adding a small portion of some warm digestive, and applying a flannel roller, without any other alteration in the plan. But if they are spread to any considerable size, nothing contributes so much to their healing as touching the sores every day with bracing and invigorating lotions, particularly diluted solutions of steel, or tincture of myrrh; which in a very few days will produce kindly granulations in these, and other cold sores, though of long standing.

When the parts are much swollen, and the sores have been long foul, it will be often necessary in severe weather to make use of poultices, of which those made of rye-meal and the compound water of acetated litharge are more active, and therefore preferable to bread and milk: the latter, however, if a little brandy be added to it, answers very well in many cases. If these are applied over the above dressing of cerate and digestive, and changed twice a day, the sores will heal in much less time than by any of the common applications I have seen used; especially if the parts surrounding the sore be well rubbed with camphorated spirit. If children be not very young, purging them with a little calomel twice a week will often expedite the healing of the sores; in the worst cases, a decoction of the bark, as well as cordials, and a generous diet, are required.

I have now, for many years, had strong proofs of the good effects of electricity in chilblains, both as a remedy and a prophylactic, especially in elderly people, many of whom are afflicted with them every winter.

AMBUSTIONES.

Burns and scalds are mentioned by some old writers; and though a misfortune by no means confined to young people, they too often fall to the lot of infants, through the carelessness

of their attendants ; and for want of being properly treated at the instant, children often suffer exceedingly, when a fit application would have rendered the injury trifling.

When such an accident happens, the nearest astringent at hand should be made use of, such as brandy, or other spirit, oil of turpentine, wine, or even cold water, till something more proper can be procured, into which the injured part should be plunged, or be covered with pieces of cloth dipped in such liquors, which will prevent the blistering of the part : or in the momentary want of any of these, holding the injured part before a moderate fire. [This is a popular expedient very often resorted to ; I have several times known it to be used, and it always appeared to increase, rather than to lessen, the anguish of the sufferer.—S. M.]

As soon as it is possible to procure officinal remedies, the following will be very proper :—

R.—Aq. calcis ℥j. Liq. plumb. diacet. ℥ss. Spir. vini Gall. ℥ij. Misceantur.

Where ice can be conveniently applied, and renewed day and night, for three or four hours at a time, it will be found the best early remedy in every bad case ; or in the want of this, keeping the parts constantly wetted with cold water.

If the injury has been too long received to admit of much relief by these means, and deep sloughs are actually formed, a very proper dressing may be made of equal parts of *cerat. è lapide calamin.* and *unguent. sambuc. virid.* ; diminishing the proportion of the latter as the sloughs shall be thrown off, and the sores become disposed to heal. But should the injured surface be large, or the pain occasioned by removing the dressings be very great, it will be sufficient to cover the parts with pieces of linen dipped in cold-drawn linseed oil, which should be moistened every day, and suffered to adhere till the sores are in a state to admit of being dressed in a common way. The repeated application of cold water has been strongly recommended, and afterwards strips of litharge plaster.*

A strong solution of soap in water has long been in use with

* Baynton on Ulcers, in a letter from Mr. Simmons, of Manchester.

artificers employed in any business exposing workmen to very bad scalds, and is a very excellent remedy. About three quarters of an ounce of soft soap is a proper quantity for a pint of water. But the soap taking some time in dissolving, and requiring a certain proportion of boiling water, the lotion cannot be made cool enough for immediate use by the addition of the proper quantity of cold water; a remedy, therefore, more convenient, and perhaps more efficacious, may be made of *ol. oliv.*, *aq. fluv. frigid.*, and *aq. kali puri.* Six ounces of oil to ten of water, with two drachms of the ley, will make a pint. This quantity may be sufficient for a burn on the hand or foot, which is to be immersed, and kept about half an hour in the liquor; this will remove the injury if had recourse to immediately, but it must be repeated as the pain may require, if the scald or burn be of some standing. Could a person scalded all over be instantly put up to the chin in a cold bath of this kind, and the head, at the same time, be frequently immersed, or well washed with the liquor, I believe very little injury would ensue. Another good domestic remedy is that mentioned by Mr. Parkinson; a strong brine, made by placing sliced potatoes and common salt, in alternate layers in a pan, allowing them to remain until the whole of the salt is liquified; which must be then drained off, and preserved in bottles, ready for immediate use. Whatever sores may be formed, should be treated according to the foregoing directions. For some new ideas on the nature of burns, and their treatment, the reader is directed to an essay, written by Mr. Kentish, 1797.

[Of all the modes of treatment in burns, that by the nitrate of silver, recommended by Mr. Higginbottom, is the most promptly efficacious. The part must be washed and moistened, and the stick of nitrate of silver tenderly passed over it, once, or at most twice, and rather rapidly, and allowed to dry. It lulls the pain, forms a superficial eschar, preserves the part from sloughing, and disposes it to heal. Cotton wool has been applied over the surface of burns also with success.—M. H.]

LUXATIONS AND FRACTURES.

Infants are not only liable to these misfortunes by a fall from the lap, but the bones or joints may sometimes be unavoidably injured in the birth. There is in this case seldom any luxation, I believe, but of the shoulder, which is not difficult to be reduced, and requires little afterwards, but that the limb be kept perfectly quiet. [It is a very good custom of some nurses, whenever they sit down before the fire with an infant in their lap, to pass a strong pin through the child's and their own clothes, thus effectually preventing the child from falling down, should they by chance doze or sleep.—S. M.]

It is very common for nurses, especially during the month, to support the lower jaw of an infant whenever it happens to yawn, in the apprehension that the jaw might otherwise be dislocated. This practice is at least an evidence of the nurse's attention, and can do no harm, though I have never known the accident happen. Should it, however, through some violence, take place, either at this age, or in older children, it will occasion a very awkward appearance, and prove very distressing to the child, who will be disabled from taking any nourishment till the luxation be reduced. Nothing more, however, is required to this end, than to place the thumb of each hand in the back of the mouth, and the fingers on the outside, under the jaw, so as to depress, and at the same time bring it a little forward, to disengage the head of the condyle, and then force the jaw suddenly back.

Fractures, indeed, are not quite so easily managed as luxations, and probably happen more frequently. The bones are yet but little more than gristle, and are easily bent, or even broken. The former is very readily restored, but I shall be more particular on the latter, as the subject is of some importance.

Fractures in the birth are usually of the collar bone, the arm, or the thigh: the treatment of the two former of which will include all that is necessary to be observed of such as may happen in other parts.

The first, however, requires very little attention, as it will be necessary only to draw the shoulders back, confining them in that posture by two or three pins in the clothes, and to apply a piece of the *empl. litharg. cum resina*, or *emplast. saponis* spread on leather, upon the rising end of the bone, and a larger piece over the first.

A fracture of the arm demands a little more attention, but will always end perfectly well. The difficulty consists in keeping the fractured ends of the bones opposed to each other, without rolling up the arm so tight as to occasion pain, or much swelling of the hand; which, in a new-born infant, a very small pressure will effect. I have found no method so well adapted as the following, which, allowing of a little tumour about the fractured part, without the necessity of loosening the roller, preserves the ends of the bones in due contact, without drawing the roller so tight as to prevent the free return of blood from the inferior parts of the limb.

To this end three little splints, about half an inch in width, and an inch and a half long, may be made of fine linen cloth, five or six times folded together, to the thickness of common pasteboard; and being soaked in a mixture of flour and white of egg, should be placed in the usual manner along the fractured ends of the bone. Being applied wet, they will accommodate themselves exactly to the figure of the limb, and when become dry, will be sufficiently strong to support the bones. They should be applied immediately on the skin, without the intervention of a roller; by which means, when the parts swell, which they should always do a little, there will be space enough between them to allow of it, notwithstanding the pressure from the roller, which should be applied over them. This ought to be of very fine flannel, and should not be drawn near so tight as for adults, nor will there be occasion for it, as the chief dependance ought to be on fastening the arm down close to the side by strong pins fixed into the little gown, in the manner the surgeon may best contrive at the time. The gown, therefore, ought not to be changed, nor the arm moved, but in his presence: and if the hand be not inflamed, nor very much swelled, and the child continue easy, the part will not

need to be opened under eight or ten days. Till this time the same gown should be worn, and be preserved clean by such coverings as may be easily removed. The speedy union of the bones will depend upon a strict attention to keeping the limb as still as possible; and if it be so preserved, the accident will afford very little trouble after the first ten or twelve days, and at the month's end the child will move that arm nearly as well as the other.

ON CUTTING THE TONGUE.

The directions on this head, as well as the notice taken of many of the following little disorders, proceed rather from a desire that nothing on the subject of children's complaints should be omitted, than from their real importance. Some of them, indeed, have been entirely overlooked by preceding writers; and though they will seldom require much attention, it may sometimes be of advantage to know what has been serviceable in similar cases. The instance under consideration, however, is too trifling a matter to dwell upon. And indeed the little operation, performed in order to lengthen the tongue, is very frequently called for where there is no absolute occasion for it, the confinement being seldom so considerable as to make it really necessary to divide the *frænum*. The child will suffer so very little, however, in the operation, that when it is carefully done, it will be attended by no inconvenience; and if it can afford the mother any satisfaction, it will be very proper to comply with her request. It seems, therefore, only necessary to add, that some little care and steadiness are required, or the sublingual veins may be wounded, and in consequence an infant may lose its life. To avoid this danger, the *bridle* may be divided by a small curved bistoury, instead of scissors. The handle and blade, when open, need not exceed two inches in length; and the point should be a little curved, and the back made broad, whereby the point may be easily forced through the *frænum* in the most troublesome case, whilst the back of the instrument will sufficiently press down the veins, so as to be entirely out of the way of being injured. These cautions have been judged by some people to be very

trifling ; but besides that infants have actually bled to death, the following equally fatal accident has arisen from cutting too deep, which I shall therefore notice in this place, as well as describe an instrument contrived for suppressing the bleeding.

SUFFOCATION FROM SWALLOWING THE POINT OF THE TONGUE,
AND HÆMORRHAGE.

The occasion of this accident, as has been said, is cutting too deep in dividing the frænum ; I have here to notice its symptoms and remedy. The former are those usually attending strangulation, and come on suddenly, and without any probable cause but that of the tongue having been cut ; but to which they are seldom attributed by those who are strangers to the complaint. The infant appears greatly agitated ; the face turns black ; and unless these symptoms soon disappear, the child goes off in a convulsion. But if they are presently removed, the infant is as suddenly well ; though they generally return again, and have in several instances proved fatal.

Mr. Petit* has, perhaps, the credit of discovering the true cause of the complaint. The remedy consists in bringing the tongue into its proper place, and, if the infant be suckled, in putting it immediately to the breast, which will give the tongue a natural direction. Should the child be brought up by hand, the tongue should be watched for some time, at least till the bleeding shall be stopped ; the complaint taking place only in consequence of that being considerable, so as to become an inducement to the infant to continue sucking at the part.

When the sublingual veins are actually wounded, the danger, it has been said, is considerable ; and it is to Mr. Petit that we are again indebted for the best contrivance for suppressing this hæmorrhage. The means consist only of a piece of ivory, in the form of a short fork ; the prongs of which should be so placed as to press against the apertures in the veins, and the other end against the inside of the lower

* Mémoires de L'Académie des Sciences.

jaw, and should therefore be broad and somewhat convex, that it may keep its place.

HÆMORRHAGE FROM THE NOSE.

This complaint was hinted at in the chapter on Sneezing, and some account of it is met with among the old writers; I shall therefore bestow a few words upon it, though it is not often of much consequence, I believe, before the age of puberty.

If a child be feverish, or otherwise unwell, the hæmorrhage is often a mere symptom arising from the complaint under which it labours, and will disappear upon that being properly treated. But a bleeding at the nose sometimes takes place in the healthiest children, the vessels of this part being weaker than those which are covered by the true skin, and often afford a salutary outlet, in the case of plethora, and therefore usually contract when the intention of nature is answered; after which a dose or two of cooling physic should be given. But it may be sometimes necessary to draw a little cold water up the nose, to which some vinegar may be added; to compress the nostril from which the hæmorrhage arises; and to confine the patient as much as may be to an upright posture. Should these little remedies fail, the head, hands, and feet may be bathed in cold vinegar and water, and the nostrils be stopped up with dossils of lint, which, upon urgent occasions, must be dipped in warmed oil of turpentine, or other styptic liquor, and must extend to the posterior aperture. The last means will almost always succeed; but if otherwise, some blood should be taken from the arm, if the pulse does not forbid; the feet be bathed in warm water, and the body kept open by manna and cream of tartar; and the patient should live for a long time pretty much upon whey, vegetables, and milk; at least he should not dine wholly upon animal food. In the intermediate days of purging, the testaceous powders and tincture of catechu may be taken; and in some instances of debility, the bark, or the Nevilholt water, will be proper.

HÆMORRHAGE FROM THE NAVEL.

The navel of new-born infants is liable to several disorders, some of which are of considerable importance; but I speak in this chapter only of the slighter ones. Of these, one is an oozing of blood from the part, after an unkindly separation from the cord, and is owing to the shooting up of a soft fungus, which prevents the skin from covering the divided vessels in the manner it otherwise does. This rawness, however, is not always attended with hæmorrhage, as will be noticed in the next chapter; but when it is so, and has not been attended to, it may continue for several months, and in some instances, in such quantity as to prove alarming to the friends of the child, lest it should in the end be injurious to its health. The little vessel from which the blood issues lies always so deep that it cannot be secured by ligature, nor be conveniently cauterized; the latter of which, indeed, would be very disagreeable. I have, however, conveyed the lunar caustic to the part, which has stopped the bleeding for a time; but it has always returned. Nothing further, however, is necessary, than to adapt a proper compress, and secure it by sticking-plaster and bandage; which should be continued for two or three weeks; or it may be restrained merely by a small dossil of lint, and cross strips of sticking-plaster applied in the manner hereafter directed for the rupture at this part.

There is, indeed, another kind of hæmorrhage of more importance, but this seems to be sympathetic, and is attendant upon infants who are in an ill state of health during the month, and is, perhaps, a bad sign. It takes place where the cord has been apparently well healed; but the skin afterwards gives way, and the bleeding is much more considerable than in the former. It requires, however, nothing more than the application of common styptics, with proper compress and bandage. The bleeding not appearing in the least to be critical, ought to be suppressed as soon as may be, and whatever complaint the infant may labour under, be treated according to its kind.

SORENESS, OR ULCERATION OF THE NAVEL.

The separation of the cord is the work of nature, whose operations are usually performed in the best manner and time. It may here be remarked, however, that in regard to the time there is a considerable variety; a complete separation in some instances taking place in five days, and even earlier, and in others not till the fifteenth or sixteenth. When so late, the funis is usually found hanging only by a very slender filament, which if perfectly dead, as it usually is, ought to be divided; nature having herein failed of her intentions.

The separation of the funis, however, is not often followed by much soreness or pain, though there is frequently a true ulcer of the part. The common applications of a bit of singed linen cloth, a toasted raisin, and dusting the part with hair-powder, or the powder of cerusse, are usually sufficient for the common soreness consequent upon the separation of the cord. In some instances, however, the discharge is very great, and the part continues to appear raw, and indisposed to heal or dry up. In such cases, I have often found three or four small pieces of a soft cabbage leaf, one of the best applications. They should be laid one over another, that they may be preserved moist and cool, and should be continued as long as the discharge shall be considerable. [Pledgits of lint soaked in a solution of sulphate of zinc and borax, and kept upon the part, have proved a sufficient remedy for this inconvenience. S. M.]

A more troublesome case is that of the part becoming sore, often some weeks after it has appeared to be healed; and as far as I have seen, (unless in some very bad cases presently to be noticed,) has taken place only where the skin of the belly has extended an unusual way on the cord; occasioning, likewise, as will be noticed in a subsequent chapter, a disposition to exomphalos. This soreness is likewise attended with much thin discharge, which disappears and returns irregularly, together with a raw appearance of the part; which is not many days in the same state. The bowels are in this case usually

affected, and should therefore be carefully attended to, and proper remedies administered, according to the nature and number of the stools; the part being at the same time covered with cabbage leaves, or with a poultice of bread and milk, or of *aq. litharg. acetati comp.* or the *decoct. corticis*, according as it may be more or less healed; or the raw part touched, now and then, with the *argenti nitras*, *cupri-sulphas*, or *pulvis lapid. calaminaris*, as its appearance and the quantity of discharge may suggest.

By one or other of these means I have always found it get well, but sometimes not in less than five or six weeks, when it has usually dried up suddenly; previous to which the infant has seldom thriven properly. In several instances, however, I have enclosed the raw part in a ligature, and this method has usually removed the complaint in a couple of days, and seems therefore always to be preferable where it can be effected.

But there is a much more alarming ulceration, which, like the former, takes place some time after the part has been properly healed, and is probably always the consequence of some other illness, or a general debility of the infant. In such cases the sore has been found to spread over a great part of the belly, and even to mortify. Here very little can be done, I believe; all the instances, excepting two, that I have known any thing of, having proved fatal; not so much indeed from the local affection or tender age of the subject, as from the original cause of the gangrene.

Whatever is found proper in a similar state of parts on other occasions, should be made trial of, such as fomentations, poultices, and a liberal exhibition of the bark and cordials, under the use of which, however, the infant rarely survives long enough to afford a due trial of their effects.

Mr. Pearson, nevertheless, has informed me of two cases of this kind of ulceration, which took place in children turned of six months old; one of whom recovered under his care by the means above recommended, which were had recourse to as soon as the sore began to spread. The other case had been attended by another gentleman, and was not seen by Mr. Pearson till a short time before the infant died.

A case of this kind, but more mild, fell under my observation, in which, upon the separation of the funis, a foul ulcer with great tumour and hardness took place, which was not healed till the end of the fifth week. Fomentations and poultices, however, with the exhibition of cordials, effected the cure, without recourse to the bark; though the infant was not free from danger till near the end of the month.

UNKINDLY SEPARATION OF THE FUNIS UMBILICALIS.

The uncommonness of the appearance here intended may be offered as a reason for noticing it, as it can require but little, if any, medical assistance. I have only once seen such a case; and being at a loss what turn it might take, it is imagined that other practitioners may not be displeased with this account of the probable result.

This case is hinted at under the article of *Hepartomphalos*, the subject of which was born in the Lying-in Hospital; where the funis was tied in the ordinary manner, about three inches from the abdomen. But instead of separating close to it as usual, only the part enclosed by the ligature decayed, the portion below it preserving its former appearance, except that it was a little shrunk or shortened: some unusual vessel, or *vasa vasorum*, it is probable, keeping up the life of this caducous part. In this state it remained for some days before the nurse made mention of it to any one; and as it appeared probable it would gradually shrink away, no particular directions were given; but it was purposed in a few days to tie the funis close to the belly, if that should not be rendered needless by the cord becoming dry and dropping off in the usual manner.

When the child was near three weeks old the funis appeared a little raw and moist, and the ligature was then determined upon; but the mother being called to a place as wet-nurse at a great distance, left the hospital suddenly, the remaining funis being still a living part, but only half an inch in length, and the child very healthy; and having heard nothing of it since, it is presumed it has continued so. [I have seen four or five cases of a disease of the umbilicus, which

I suppose to be of the same nature with that above described. It appeared to me to be a true fungus springing up from the umbilicus to the height of half or three quarters of an inch; and much resembled in shape and size the funis, except that it had no external covering. In one of the cases a ligature was applied, but did not cure the complaint, the fungus continuing to grow, after the tied portion had sloughed away. A daily application of the lunar caustic cured two of these cases, the others yielded to the constant application of a solution of sulphate of zinc.—S. M.]

HERNIÆ.

Ruptures may take place in different parts, but they usually appear at the navel or the groin. The exomphalos is sometimes complicated with the ventral hernia near the part, and is occasioned by the separation of the recti muscles, the linea alba being there deficient; but it seldom extends far above or below the navel. The simple exomphalos is a very common complaint, which if immediately attended to is easily cured, perhaps merely by the use of the cold bath; but if neglected may prove troublesome as the child grows up, especially to females. It will be sooner cured, however, if treated like the hæmorrhage of the navel, by adapting a pyramidical compress, made of round pieces of good sticking-plaster, spread upon thin leather, with pieces of card placed between them; or what is more easily prepared, and is adapted to poor people, a piece of bees'-wax as broad as a shilling, and half an inch thick; the upper part of it may be round, and the other flat; or a half sphere of ivory, the rounded part being pressed on to the navel, and strapped over with adhesive plaster, which should pass about three fourths round the body, drawing the integuments from the hinder parts towards the umbilicus; if the adhesive straps pass all round they are apt to interfere with the respiration. As the projection diminishes the ivory sphere may be omitted, and the adhesive plaster alone made use of, and which in the the more simple cases will be sufficient of itself. Some families are very prone to this kind of rupture; and not un-

frequently the nurse is blamed when it happens, and sometimes the medical attendant, though it is impossible for either to prevent it, as it is owing to a natural defect of the part. The foregoing plan in some rare cases does not succeed, and then it will be necessary to apply an umbilical truss, which should be hollowed on the sides so as to make no compression, except on the part affected.

The bubonocoele is of more consequence, yet may be safely left without a bandage, especially as affusion of cold water, or the cold bath alone, generally cures it when happening to children before they go alone; the nurse carefully attending to returning the prolapsed parts as often as may be. In early infancy, there is likewise some difficulty in retaining the truss on the part, and it is continually liable to be wetted. If a rupture, however, should be very large, and the infant unusually fretful and crying, recourse may be had to a steel truss; to which it will be necessary to pay great attention lest it slip out of its place, or the rupture fall down and be injured by the pad. After two years of age, indeed, when children begin to take more exercise, the use of a truss seems to be absolutely necessary, of which those made of steel are incomparably best. Should the cure of either kind of rupture proceed slowly, cold-bathing will assist it as well as be proper, for some months after leaving off the bandage or truss.

Lastly, it may be proper to drop a word or two on the strangulated hernia; which is more apt to take place in the groin than in any other part, though happily it is not very common in children. I have, however, seen a fatal instance of it in an infant only six weeks old. It can be necessary to do little more than to repeat here the observation made in the chapter on vomiting; that when any part of the intestine is strangulated, the stomach will frequently eject every thing that is put into it, and should therefore furnish a suspicion of such an accident, and lead to an immediate examination of the parts. Should the slightest appearance of tumour or heat be discovered, the experienced surgeon will pay a proper attention to it, and can need no directions from this work. I shall only observe, therefore, that the free application of cold water

or ice, after the ordinary remedies have failed, has in several instances succeeded: upon the like principle, vitriolic ether has been recommended.

HYDROCELE.

This distention of the scrotum is of a nature similar to the hydrocele of adults, and when it falls to the share of infants, I believe usually appears at the birth. It has been sometimes mistaken for a common rupture, and a linen bandage been applied in the ordinary manner. It is, however, easily distinguished from that complaint by the tumour being transparent, without pain, and from not readily retiring upon pressure, nor being increased by the crying of the infant.

It has been thought always to be a congenite complaint, and that the tumour does not retire upon pressure; but I have seen a few instances where it has been otherwise.* In one I had occasion to examine the parts very attentively at the birth, on account of a little mal-conformation of another kind, and neither then nor the next morning saw any appearance of hydrocele; nor was it discovered by the nurse or mother till six weeks afterwards, though the parts, for the reason above-mentioned, were frequently examined. About this time I was sent for in haste, on account of the appearance of a large hydrocele, which, however, by the mother's report, was before I got there considerably diminished. The scrotum, nevertheless, contained (as I imagine) near a table spoonful of water, and was from this time distended in different degrees, as the water happened to retire more or less through the tunica vaginalis and rings of the muscles, which I apprehended must have been preternaturally open, though no portion of the mesentery nor intestines ever descended. The complaint, however, disappeared in a few weeks, by only dashing the parts with cold water three or four times a day. This infant was a twin; and it is remarkable, that the other child had likewise a hydrocele, which was not discovered for three weeks after the

* M. Le Febure de Villebrune met with it in a child of twenty-two months old.

former ; but was much smaller, and got well by the like gentle treatment.

The hydrocele is a harmless complaint, and would probably always disappear of itself in the course of a few months ; but may much sooner be dispersed by some astringent lotion. The *Liq. ammon. acetatis* has succeeded with me perfectly well, and I have sometimes made use of compresses wetted in vinegar and water, with the addition of a little spirit, as the skin has been able to bear it. Perhaps the addition of crude sal-ammoniac, as advised by Mr. Keate in the treatment of adults, might assist the absorption of the water ; but I have myself never had occasion to make trial of it. The smoke of burning gum benjamin, received upon flannel and applied to the part, is likewise a good remedy. As lotions are apt to abrade the surrounding skin, we have usually preferred rubbing the scrotum with *lin. saponis*, or *lin. camphoræ comp.*, or the two combined. But the speediest method is to puncture the bottom of the tumour with the point of a lancet ; which, as it may always be done with perfect safety, and with very little and only a momentary pain to the child, is often preferred by the mother, as it instantly removes a blemish which cannot but be unpleasant to her, whenever any other person may chance to be witness to it. In whatever way the water may be got rid of, I never knew it return, nor the child suffer any consequent inconvenience ; though the complaint is so common that I have seen it in many score instances, and cured in different ways.

PNEUMATOCELE.

Having never seen this complaint, and conceiving that the preceding disorder has often been mistaken for it, I should not have noticed it, but in the view that nothing relating to infantile complaints might be overlooked. Should the scrotum, however, be really distended with wind, a piece of cotton fumigated with gum mastic, may be applied twice a day, and the part embrocated with the compound water of acetated litharge and camphorated spirit, and be supported with a proper bandage.

RETENTION OF THE TESTES.

One or both of the testicles, in some instances, remain in the abdomen of infants at their birth, and then a tumour appears in one or both groins, forming another affection resembling the hernia, and which is here noticed on that account. As the application of a steel truss, or indeed any other bandage, might here be attended with bad, if not fatal, consequences, it is of importance to avoid the mistake.

This complaint being generally owing to a preternatural stricture of the rings of the abdominal muscles, or to a want of due action in the cremaster or gubernaculum, I have nothing to recommend, unless it be in a negative way, to forbid any rude handling of the part, in order to force the testicles into the scrotum. If any thing of this kind should be judged necessary, from a disposition of the parts to give way, the descent should be only very cautiously assisted, and that not frequently. In the course of a few weeks or months, however, the obstacle, of whatever kind, usually gives way; though sometimes indeed the part remains confined through life, and its unnatural position is certainly attended with some inconveniences, and a greater chance of injury to the testes; of which I have seen more than one instance in adults. In some, a hernia congenita has likewise taken place, and been attended with such troublesome effects, as to render it necessary to have recourse to a truss, (carefully adjusted,) notwithstanding the situation of the testicle. Should inflammation take place, in consequence of any accident during infancy, every proper means of counteracting it should be immediately had recourse to, such as gentle laxative medicines, and sedative embrocations and cooling poultices, made of the compound water of acetated litharge.

TUMEFACTION OF THE PREPUCE.

This little complaint, like the hydrocele, arises from extravasated serum, and is a partial anasarca; and if it be not attended with inflammation, nor owing to a stone sticking in the

passage, as it sometimes is, never proves of any consequence. It is sometimes preceded by a copious discharge from the part, of a thick but soft consistence, resembling a strong lather of soap, or the froth of milk, which disappears as soon as the tumefaction subsides; by which the natural secretion from the glands has been confined.

The part may be washed frequently with the *aq. litharg. acetati comp.*, or be wrapped up in a poultice of that kind, and the body be kept open, which usually removes the complaint in two or three days; but if it should not, the part may be lightly scarified, and afterwards fomented. Should it arise from inflammation, as in the erysipelas infantile, the inflammatory cause must be properly treated. If from a stone in the passage, the stone must be extracted, if within reach; or if otherwise, it should be forced back into the bladder.

PROLAPSUS, OR PROCIDENTIA ANI.

This is a descent of the internal coat of the lower bowel, (this coat, it is well known, being much longer than the others, and full of folds) and is either owing to its laxity or to irritation. It is no uncommon complaint, nor usually difficult of cure, being generally a symptom of some other; such as worms, or other foulness of the bowels; or has been induced by rough purges, diarrhœa, long costiveness, a stone in the bladder, or other irritating cause; and is usually preceded by tenesmus: to each of which the proper remedy must be applied, or the cure of the prolapsus will be attempted in vain.

But if the complaint should remain, after the irritating cause has been removed, it will then depend merely upon a relaxation of the part, arising from the long habit of descending every time the child has gone to stool; and is, in general, easily cured merely by an astringent lotion. To this end, a compress of lint or soft tow, of sufficient thickness, wrung out of the dregs of red wine, to which may be added a few drops of the *aq. litharg. acetati* should be often applied, and secured by a linen bandage, so as to make a firm compression on the part: or a compress may be sprinkled with fine powder of

myrrh, frankincense, and dragon's blood, or impregnated with the smoke of turpentine cast on burning coals. Or suppositories may be made of powder of balaustines, red rose leaves and oak-bark in honey, and introduced into the bowel after going to stool.—It may be found expedient to have the part supported at such times, by a servant placing a finger on each side the gut, as well as for the child to sit on a high seat, so that the feet may not touch the ground, or to sit on these occasions on an inclined plane, or for older children to stand; but these cautions will not be necessary unless the complaint have been of long standing, or the descent be considerable.

When this is the case, astringent fomentations and injections will also be expedient. These may be made of the decoction of the *cortex quercus*, which must sometimes be rendered more powerful by the addition of alum, the quantity of which should be increased as the part may be able to bear it.

Should such a case occur in children, as it frequently does in adults, in which the bowel may not be easily returned, on account of supervening tumour and inflammation, the stricture will never fail to yield to an injection of cold water with a few drops of *aq. lithargyri acetati*, with five or ten of the *tinct. opii*.* An hour or two after such an injection has been thrown up, the prolapsed intestine, though perfectly black as well as swollen, will be found to retire of itself; the sedative quality of the injection removing the spasm and stricture, which afforded the only impediment to the re-ascent of the bowel.—With the like view, Mr. Bell, in his *System of Dissections*, recommends the use of a strong cone of paper softened (by being moistened at the point) and oiled. This is to be introduced into the gut with gentle but continued pressure; and when the gut is completely reduced within the anus, the cone is easily withdrawn, with little risk of its bringing down the intestine again. A kitchen candle answers this purpose as well or better.

Children affected with this complaint should usually sit on

* I have found it necessary to apply leeches in such a case, before the inflammation and tumour could be reduced.—S. M.

a hard, flat-bottomed stool, or a chair without arms, and of such a height that their feet may not touch the ground.—For children of eight or ten years old, who take much exercise, recourse may be had to Mr. Gouch's suspensory as improved by Mr. Savigny, instead of the linen bandage above recommended.

DISCHARGES FROM THE VAGINA.

These are either sanguineous, mucous, or purulent. As I speak professedly only of appearances before the age of puberty, I have merely to remark on the first, that infants have sometimes such a discharge from the vagina a few days after birth, and that the like happens to girls eight or ten years old; but neither appears to be of any consequence. Should it, however, on any account be thought necessary to prescribe something, a little testaceous powder or magnesia, according to the state of the bowels, will be sufficient, as the discharge always disappears in a few days.

Children of five or six years old are subject to a mucous gonorrhœa, resembling the genuine fluor albus of adults, which will in some instances be in an excessive quantity, so as to run through all their clothes; and is sometimes, though rarely, tinged with blood. If it were suffered to continue, it would probably injure the health, but I believe may always be cured by one or other of the means recommended for the next, which may be called purulent gonorrhœa.

[The following case has not hitherto attracted sufficient attention, both as an illustration of this point, and an additional evidence of the existence of this singular affection.

"Jane Hampson,* aged four, was admitted an out-patient of the (Manchester) Infirmary, Feb. 11, 1791. The female organs were highly inflamed, sore, and painful; and it was stated by the mother, that the child was as well as usual till the preceding day, when she complained of pain in making water. This induced the mother to examine the parts affected,

* See Medical Ethics, by Dr. Percival. Note by Mr. Ward, of Manchester, page 231.

when she was surprised to find the appearances above described. The child had slept two or three nights in the same bed with a boy fourteen years old; and had complained that morning of having been hurt by him that night.

"Leeches, and other external applications, together with appropriate internal remedies, were prescribed; but the debility increased, and on the 20th of February the child died. The coroner's inquest was taken, previously to which the body was inspected, and the abdominal and thoracic viscera were found to have been free from disease. The circumstances above related having been proved to the satisfaction of the jury, and being corroborated by the opinion I gave, that the child's death was occasioned by external violence, a verdict of murder was returned against the boy with whom she had slept. A warrant was therefore issued against the boy, but he had absconded, a circumstance which was considered as a confirmation of his guilt, when added to the circumstantial evidence alleged against him.

"Not many weeks, however, had elapsed, before similar cases occurred, in which there was no reason to suspect that external violence had been offered; and some in which it was absolutely certain, that no such injury could have taken place. A few of the patients died, though from the novelty and fatal tendency of the disease, more than common attention was paid to them. I was then convinced I had been mistaken in attributing Jane Hampton's death to external violence; and I informed the coroner of the reasons, which produced this change of opinion. The testimony I gave was designedly made public, and the friends of the boy hearing of it, prevailed upon him to surrender himself.

"When he was called to the bar at Lancaster, the judge informed the jury that the evidence adduced was not sufficient to convict him; that it would give rise to much indelicate discussion, if they proceeded on the trial; and that he hoped, therefore, they would acquit him without calling any witnesses. With this request the jury immediately complied."*—M. H.]

* Med. Chir. Trans. vol. vii. p. 94.

PURULENT GONORRHÆA.

This is also no uncommon complaint, even in children of two years old, and is then, in general, easily removed by a little cooling physic, and keeping the parts perfectly clean. I have sometimes made use of a lotion of the *aq. litharg. acet. comp.* which I believe is preferable to most others, if had recourse to in the commencement of the complaint; and if there be any excoriations, they should be covered with the *unguent. cerussæ acetatæ*, spread upon linen, or lint. Instances will now and then occur in this species also, in which the quantity of discharge will be exceedingly great, so as to run down the child's limbs several times in the day, and will last for two or three weeks: but it has always disappeared in that time, and not uncommonly, where it has been the most copious, ceases almost suddenly.

When the purulent discharge makes its appearance much later, as it not unfrequently does, and is much discoloured and fetid, it gives rise to suspicion which young practitioners cannot be too guarded against. There are, indeed, instances of little girls, not more than six years old, being injured, and it is therefore of consequence to make a judicious discrimination: but there are, on the other hand, instances of a very suspicious appearance, as late as the age of thirteen or fourteen, where no injury could be received without the consent of the party, who is generally perfectly innocent, and where, therefore, the least suspicion would be very distressing to her, and might make a whole family miserable.*

* Induced by motives of humanity, I hope I may be permitted to add a word or two more on this subject; since the prudence and information of practitioners may not only prevent a vast deal of unnecessary distress to many worthy families, but may even save the character, or life, of another party suspected of criminality. For, besides many instances wherein inattention or ignorance might give rise to injurious suspicions, there are cases which call for both great attention and experience, in order to form a just and decided opinion. I have, indeed, known the discharge to be so ill coloured and fetid, and attended not only with great pain and inflammation, and excoriation in different parts, but such tumours and other appearances resembling violence offered, about the furca, and in other instances, with abscess in the labia,

Discharges with the worst appearances are frequently carried off in eight or ten days, merely by the treatment above recommended; but I have seen some cases in the youngest subjects, of a bad habit of body, where mercury, as a deobstruent, has proved useful, though I could not have the least suspicion of a venereal taint. In such cases I have found Ward's white drop a more convenient medicine than any other preparation of mercury; it may be given in the dose of half a drop, and, by degrees, increased to two, and even three drops, once or twice a day, for two or three weeks. But where this has failed, I have only to add, that I have been always able to succeed by giving the *decoctum corticis, cum balsam. copaibæ, ovi vitel. soluto*; which is also an admirable medicine in the fluor albus of adults.—See *Sir Astley Cooper's Lectures, Gonorrhœa in Females*.

ON THE VENOM OF INSECTS AND OF CERTAIN ANIMALS.

Though the following accidents, like some others before mentioned, are not confined to any age, they are at least more formidable when they fall to the lot of little children. On this account, it may not be improper to recommend suitable antidotes against the bite or sting of certain venomous creatures to which they may be more particularly exposed; and first, of such insects as the wasp, gnat, and other flies. Indeed, for the most venomous, such help can scarcely be had before considerable inflammation has taken place; after which it will take its course, and will continue, if occasioned by the large gnat, three days, and by some other insects, for six; though the tormenting itching may be allayed much sooner by the means of proper applications. If the bite should be on the eyelid, the inside of the lip, or ear, very troublesome symptoms may follow, and the infant will be vexed by it exceedingly.

that had the patient herself advanced any charge, I fear I should not have hesitated to have joined in with it; and yet from the event, as well as the whole history of several cases, it has been very evident that no kind of injury had been received, nor anything like intercourse taken place.

In the absence of better remedies, the first application may be of the strongest spirit at hand three parts, two of vinegar, and one of sweet oil; taking care it do not get into the eyes. But as soon as may be, the following should be applied very frequently; which will check the progress of the venom, and allay the pain and itching immediately.

R.—Spir. camphorati, ℥ss. Acet. distillatæ, Tinct. opii āā ʒj. Misceantur.

to which, if the injury be not too near the mouth, may be added twenty drops of the water of the acetated litharge.

The bite of the common bug, which infests crowded places not only occasions a tormenting itching in children of a very delicate skin, and in certain grown people newly come from open villages, but will also sometimes raise blisters as large as pigeons' eggs, and will inflame the parts for several days. A very good application is vinegar, with a small quantity of olive oil, and a few drops of laudanum; oil alone would rather increase the size of the blisters. But the best application for the sting of any of the above-mentioned insects, where the inflammation extends far, is ice, which immediately takes of the heat and itching; and should be repeated for an hour or more at a time, every three or four hours, as long as may be necessary.

The sting of some insects has sometimes been found to penetrate one or more of the absorbent vessels, and has then produced an appearance that would have been very alarming if such insects could convey a truly morbid poison. I have seen large branches of lymphatics, very tumid and inflamed, running from the knuckles to the axilla, producing an almost intolerable itching and burning, until the last-mentioned remedy has been applied; which has presently abated these troublesome symptoms, and carried off the hardness and inflammation by the next day. For the highly venomous bite of the viper, the immediate application of olive oil is the well-known and certain remedy; as well as the internal exhibition of the volatile alkali.

ON THE BITE OF MORBIDLY ENRAGED ANIMALS.

Under the painful impressions of an awful accident that happened in my own family, at the time I was first engaged in this part of the work, (though, thank God, the alarm terminated happily,) I cannot avoid dropping a few words upon the bite of morbidly enraged animals.* It is not my intention, however, to advert to the peculiar nature of this most malignant poison, nor to enumerate the many deceitful remedies that have been at different times proposed with an air of infallibility, imposing on the ignorant, but whose inefficacy is too well ascertained.† Nor is it my design to propose any new remedy, but rather to lament that the best preventives should be so ill attended to, particularly among the inferior class of people, to whom this dreadful accident happens oftener than to the higher. And on this account, as well as the subject being rarely treated of, it is hoped the intention will apologize for obtruding a friendly caution in this place. For after a good deal of experience, and much inquiry and reading on this subject, I am confident that nothing ought, in any instance, to be depended upon, but taking out the injured parts by the knife or caustic, or the assistance of both; which, however, if duly and timely effected, cannot fail to prevent every evil apprehended.‡ But whenever the situation of the wound may not admit of going deep enough to ensure success, or too much time may have already elapsed, the stronger mercurial ointment ought to be rubbed in very freely, so as to raise a salivation; which has not only been thought to have

* The disease among dogs has been known, it is said, about 2050 years.

† In regard to dipping, or rather half drowning in the sea, I shall just remark, that I should have more hopes of its efficacy upon the first approaches of the hydrophobia, than as a preventive very soon after the bite.

‡ Since former editions of this work, this opinion is further confirmed by the cases of Mr. Jesse Foot, published in Dr. Simmon's Medical Facts and Observations; in which we see the different success attending excision of the parts, and various other highly extolled remedies, even in subjects bitten by the same animal. A remarkable case is also given in the 4th vol. of the Memoirs of the Medical Society of London, by Dr. James Sims. A very melancholy case has also been published by Dr. Moseley.

proved an effectual prophylactic, but to have also succeeded even where evident symptoms of infection had taken place;* though such testimony, I am sorry to add, is much weakened by many later experiments.

For the sake of such readers as may not have an opportunity for reading many different publications, it may not be superfluous to subjoin the judicious directions of the faculty in Paris, submitted to the Committee of Public Instruction, which will bring the whole of the indications into view.

Let the wound and the surrounding parts be well washed with lukewarm water, to take of the slaver as much as possible.

Let the wounded flesh be then instantly cut out with a sharp instrument; or cauterised with hot iron, or with aqua fortis, or oil of vitriol,† or the *argentum nitratum*.

Suppuration will be accelerated and pain alleviated by filling and covering the wound with a poultice of bread and milk, applied lukewarm, and renewed every four hours.

Let the surrounding parts be then rubbed with strong mercurial ointment. If the danger be imminent, and the bites deep or numerous, salivation should be excited as soon as possible. It is also necessary, in this extremity, to cut away, burn, or cauterize the flesh around the wound, even although it should appear to be healed up. It is certain that the wound opens when the hydrophobia makes its appearance.‡

In a work calculated for as extensive usefulness as the writer's resources may supply, it can scarcely be judged im-

* See Histoire et Mémoires de la Société Royale de Médecine, Année 1783, 2de partie.—Tissot, Dr. Layard, &c.

† Dr. Hamilton's experience confirms the efficacy of excision in numerous instances, when done as late as the fifth and sixth day after the bite; and in some instances, after the reinflammation of the bitten part, and commencement of the symptoms. He also prefers an excision of the parts, as more certain than the caustic, unless the *kali purum* is made use of, which forming an immediate eschar to some depth, the eschar may be removed by a spatula, and the caustic be repeated immediately, as often as may be judged necessary.

‡ Is it *certain* that the wound opens when the hydrophobia makes its appearance? or is this one of the received opinions which are in reality unfounded? It has fallen to my lot to see several cases of hydrophobia, and I cannot recollect that in a single instance the wound opened. In two cases I am sure it did not.—S. M.

proper to add to all that I have said, the pertinent observations found in Dr. Hamilton's last edition on this melancholy disorder, as guards or preventives of injury.

The following symptoms, he tells us, may be noticed in dogs about to become rabid.

1st. A disinclination to food.

2nd. A marked melancholy.

3rd. The eyes appearing mixed and dull.

These symptoms, he says, mark the first stage, yet with scarcely any thing pathognomonic. But it is added, that the animal now occasionally forgets his master, and is irregularly peevish; and it becomes at this time highly proper to regard our safety, and not to trust him if he snarls, nor to caress him.

The second stage is more distinctly marked; the dog does not feed with avidity, though he does not refuse either victuals or drink; the latter in no stage offending him as it does man under this disease. But he shuns other dogs, and is equally shunned by them. A convexity may likewise be discovered in his back, formed by drawing his hinder towards his forelegs; and an extreme dryness of his nose.

In the last stage he loses all recollection, quits his master's house, runs forward anywhere, and rushes, without barking, at every animal coming in his way, but turns not aside to bite any; and within the space of two days after dies convulsed. If he be tied up, he bites at his chain in this stage, and is furious if approached.

I have only to add (what it is, indeed, a great satisfaction to be able to say) that, dreadful as this accident is where the poison has taken effect, it is evident that only a very small proportion of those who are bitten by animals actually enraged, become really infected.* Fortunately, the clothes sometimes prove a defence, by wiping off the foam from the animal's teeth: at others, it does not happen to be forced into the wound, or is not yet possessed of a poisonous quality; or lastly, it is not absorbed, or the system may not be in a state

* Dr. Hamilton says, not one in sixteen.

to be infected. These assertions are supported by numberless facts, though much less frequent, perhaps, in London, than in some other parts, especially in the vicinity of large forests on the continent, where such animals are very commonly met with, and often wound great numbers of people.

It is doubtless the uncertainty of the bad consequences of such injuries that has supported the credit of many fallacious remedies on this melancholy occasion. Encouraging, therefore, as the above circumstances certainly are, it would indeed be madness to confide in them, where the proper remedy may be made use of in time; and though I should wish to conceal rather than spread these acknowledged facts, could I think they would have such an effect, it is, on the other hand, no small satisfaction, that such encouragement may be justly held out to those who may be under any alarm for themselves or their friends.

ENCEPHALOCELE, OR HERNIA OF THE BRAIN.

Many infants come into the world with various parts imperfectly formed, especially about the head; and never more commonly than in the upper part of the skull. If the deficiency be very great, and accompanied with a like want of brain, which it usually is, such fœtuses fall under the class of Monsters; and being never, or seldom born alive, are not subjects of this work.

The hernia of the brain, on the other hand, is met with in infants otherwise completely formed, and is generally curable. The public is indebted to Mons. Ferrand for an accurate description of this complaint, given in the fifth volume of the *Mémoires de l'Académie Royale de Chirurgie*.

The encephalocele is a soft circumscribed tumour, usually of a round form, and correspondent in size with the extent of the deficiency of cranium to which the complaint is owing. It is without fluctuation, or discoloration of the skin, but is attended with a perceptible pulsation of the brain, which is synchronous with the pulse. The tumour retires and disappears

upon pressure, and is always situate either on one of the fontanelles, or in the course of one of the sutures, and is never larger than a pullet's egg. Where the defect in ossification is very considerable, a much larger portion of brain is consequently protruded; which, strictly speaking, it were less proper to call a disease, than a fatal mal-formation, as it is pertinently remarked by Mons. Ferrand; and no more resembles the true encephalocele, than an eventration resembles the common intestinal hernia. It will be very necessary, however, carefully to distinguish this incurable evil from other soft tumours of the scalp, presently to be noticed, which it very much resembles; the latter having frequently the like precise feel of a bony margin around them, as is common, indeed, in cases of extravasation upon any solid surface. The tumour is also colourless, and often as large as in the fatal mal-formation, but has a considerable fluctuation; and is further distinguishable by the tumour not retiring upon pressure, nor being attended with any pulsation.

The encephalocele is, indeed, easily distinguished from them all, by the brief description above given of it; and fatal as it would be were it left to itself, requires only to be understood, in order to adopt a rational and effectual remedy; which consists in a careful and due compression of the part. This may be effected by the application of a piece of sheet-lead, somewhat larger than the tumour, and pierced with holes, that it may be sewed to the child's cap. The compression should at first be very moderate, and never so great as to give an infant pain, or disturb any of the natural functions; though it should be gradually increased as the tumour shall retire. This is all that is required from art, the cure being the business of nature, which, if the child continue healthy, will proceed in the work of ossification, and in due time fill up the vacancy in the skull. The protrusion of the brain was before an obstacle to this process, whilst the injury that tender organ must sustain by the pressure from the sides of the bone, exposed it to all the evils which compression never fails to produce, and which it were needless to enumerate in this place.

TUMOUR OF THE SCALP.

There are other tumours on the head of new-born infants which it were improper entirely to pass over. The one I shall first mention is of the least importance of any, being occasioned merely by long compression in the birth. It is of different sizes, and the skin is always discoloured; but in any case can seldom require much attention, as it frequently disappears in a few hours. If large, it is common to bathe or foment such tumours with red wine, or with brandy, or vinegar, diluted with water; and in general, they gradually subside, though sometimes not perfectly for several days. Some of them, however, are of more consequence, and concerning the treatment of these, practitioners have differed. The absolute impropriety of opening any tumours arising from compression has been insisted on by many, but I believe it may in some cases be really necessary, in order to prevent a troublesome fungous sore, and even a caries of the skull. The discrimination, however, is sufficiently obvious, such assistance being required only where the above remedies and compression have had no effect, and the tumour is found sensibly to increase day after day, which in some instances has been the case to the end of the month. Such growth is always owing to the extremities of the arteries, ruptured by long compression, being still open, and pouring out an ichorous fluid into the cellular membrane, and thereby keeping up and increasing the original tumour.

Upon opening the integuments, a bloody fluid is let out, and the tumour nearly subsides, requiring afterwards nothing but moderately astringent applications and pressure, which should be continued for a little time after the aperture is closed.

Another kind of tumour, of a more unfavourable appearance was hinted at under the article of Encephalocoele, and of this it may here be proper to take a little further notice. These tumours contain a kind of serum, and are often very large, but without that discolouration of the scalp and bruised appearance, which are constantly observed in those last de-

scribed, nor do they indeed seem to arise from compression. I have at least seen them extending over a third part of the head, and raised an inch or more from the skull, after the shortest and least painful labours. To the description before given of them, it may be added that this kind of tumour, I believe, will always subside very kindly, though sometimes not completely, until the end of the month. In some instances, it begins to lessen in six or eight days after birth, but in others not till near the end of the third week, and then subsides very rapidly; and as it falls, more and more of the skull may be felt, from day to day, in proportion as the absorption of the fluid takes place. To assist nature, therefore, in this operation, embrocations of *acetum distil. sal ammon. crud.* and *spirit. camphoratus*, should be made use of, with a gentle compression of the part; as well as keeping the bowels properly open.

All these tumours of the scalp, be their magnitude what they may, are better simply treated by refrigerating astringent lotions only. Under this practice they almost invariably disappear in a longer or shorter space of time. Whenever, on the contrary, they have been interfered with by lancing, or puncture, the cases have usually terminated unfavourably.

A tumour of a different nature from each of these is described by Michaelis, of Harburg; but as I have never seen it, and, indeed, imagine it is not known in this country, I shall merely state it as related by Loder.*

This tumour is to be distinguished from swellings on the head, with which children are sometimes born, or that appear after a slow and difficult birth, occasioned by long pressure, or the rupture of some blood-vessels; and it differs by the following marks from any other swelling of the head, *hernia cerebri*, or *hydrocephalus internus*.

1st. By being often observed after very easy labours.

2nd. By not always appearing on prominent parts of the head; though this may sometimes be the case, on account of its generally being remarked at the temples.

3rd. By commonly appearing one day after birth.

4th. By being more elevated and circumscribed than any

* Lond. Journal of Surgery, vol. ii.

other swelling on the head, and by showing a perceptible fluctuation.

5th. By the skin, with which it is covered, keeping its natural colour and state, and by its being easily moveable on the tumour, without changing the situation of it, a circumstance that seems to prove its being deep; the skin, therefore, appears to move on the tumour when the child is crying.

6th. By not disappearing, or diminishing on the application of pressure, by which, also, no stupor is occasioned; a symptom that always takes place in a hernia cerebri, or hydrocephalus internus.

7th. It differs from a tumour caused by the rupture of blood-vessels, or from a lymphatic swelling, by the singular change which the bone on which it is situated is observed to undergo. The external table of the bone is entirely wanting; the diploë uncovered; and the edge of the impression that is thus occasioned may be plainly felt. By this peculiar circumstance, the tumour is particularly distinguishable from any other.

On opening it, a black and coagulated blood is found in it, lying immediately on the diploë. It is very probable that the tumour originates from a disease of the bone; and that it is not occasioned by the former, on account of their both being found in the same state from the first moment.

To remove this tumour by discutients, is an attempt that has, in most cases, proved ineffectual. The disease of the bone is increased by the pressure of the blood exciting the absorbent vessels to a greater action in the bone, whereby, at last, a hole is occasioned, and the brain injured by its being pressed. The only thing that can be done is to open the tumour, and to let out the blood, in order to prevent the further absorption of the bone. This operation is not without danger, on account of the loss of blood that runs from the bone as from a sponge; but by making the incisions small, it may in a great measure be avoided. It is, however, very seldom that it succeeds in healing the bone, and the children generally fall a sacrifice to this singular affection. Fortunately, it is rarely observed; but, according to Michaelis, it seemed to occur more fre-

quently at Harburg than anywhere else. He relates a case of this disease which may be briefly stated as follows:—A tumour of the size of an egg appeared on the right temple of a newborn infant the following day, after a labour which had been uncommonly easy. As it showed the above mentioned characters, there could be no doubt of its being this species of tumour. He first tried to dissolve it, and a cold solution of sal ammoniac and saltpetre in vinegar, and cataplasms of the herb Arnica, were accordingly applied; but having continued them nearly a fortnight without the least effect, the tumour was opened, and a black thick blood discharged from the wound. The bleeding, which was not very considerable, ceased on the application of alcohol, in which scraped linen was dipped. The wound began to suppurate the next day, and in twelve days it was healed up; the child felt no pain whatever, and was quite well; a depression however remained, from the want of the external table of the bone. A few weeks after, the child was seized with a general erysipelas, of which it died. Dr. Michaelis being curious to inform himself of the state of the bone, where the tumour had been situated, cut through the integuments, when he found the bone appearing with a rough surface, deprived of its external table as far as the tumour had extended, and only seeming to be regenerated in some places.

LYMPHATIC TUMOURS ON THE HEAD AND SPINE.

There is another kind of tumour appearing sometimes on the head, and at others on some part of the spine, which is not owing to accidents in the birth, but is of a morbid nature. These tumours contain a lymph, and are attended with evident fluctuation, as may be discerned by the touch: and unless they are exceedingly small, ought in no case, I believe, to be punctured, or even removed by ligature, though adhering only by a small pedicle. Those on the spine of the neck, or back, or on the loins, if they do not arise from the dura mater inclosing the medulla spinalis, seem to originate at least from the periosteum of the spine; and the issue having a

morbid source, will be kept up after the tumours are opened, or even totally extirpated, and the sore being prevented from healing, the infant sinks under the discharge, or dies in convulsions.

But there are other tumours of a similar appearance, which being nevertheless of a different kind, may be sometimes safely extirpated, and will be noticed below after the Spina Bifida, to which, likewise, they bear a considerable resemblance.

IMPERFECT CLOSURE OF THE FORAMEN OVALE, AND DUCTUS, ARTERIOSUS; WITH OTHER PRETERNATURAL CONFORMATIONS OF THE HEART.

The subjects of these affections have been termed *pueri cæruleati*; but the affection itself might more properly lead to a name, and be termed *cutis cæruleata*, (cyanosis, or blue disease,) though neither would describe at all the nature of the disorder.

Dr. Sandefort, Mr. Abernethy, and more lately Dr. Nevin, of Glasgow, have given instances of it, which accord with those before offered to the public by other writers.

These morbid deviations appearing in different parts,* have in all the same tendency, viz., in a greater or less degree to obstruct the passage of the blood through the lungs, which in some instances has continued nearly the same as in the unborn foetus. The peculiarity is sometimes in the pulmonary artery, which is constricted, or closed, as it rises from the right ventricle; at others, in the septum cordis, which has an unnatural opening, affording a free communication between the two ventricles; sometimes in the aorta arising equally from the anterior and posterior ventricles; and sometimes in the imperfect closure of the foramen ovale, or the ductus arteriosus.

These sources of disease are mentioned merely with a view of pointing out the symptoms by which they may be known, and not of suggesting a remedy, which is out of our power.

* See Morgagni, Epist. 17, Art. 12, Lond. Med. Journal, page 4, and Med. Observ. & Inq. vol. vi.

The recital, however, may serve to prevent fruitless attempts, and perhaps the aggravation of the symptoms, and consequent distress of the patient, where upon due knowledge of the disease, art has evidently nothing to offer. The imperfections are owing entirely to an original malformation of parts, or to a deficiency in the powers of the system soon after birth; the only time in which that diversion to the circulation can take place, which nature has intended upon the change made in consequence of respiration.

The precise time when this new mode of circulation should take place, is not attempted to be settled, the passage between the auricles, and that between the two great arteries, being open in children of very different ages; nor do both always close at the same time. It is conjectured, however, that this process ought to begin from the birth, as it is found to do in the remains of the vessels of the funis umbilicalis;* so that, although the fœtal apertures in the heart should not be actually impervious at the end of some months, it is imagined that some constriction has usually taken place, and that, at least, some check is given to the blood's passing from one side of the heart to the other, in the free manner it does in the fœtus. This, it is natural enough to conceive, and I apprehend, is owing to a greater quantity of blood rushing into the lungs, in consequence of respiration, (which lessens the difficulty of entering that organ;) by which means, a greater quantity flows into the left auricle from the pulmonary veins, which filling the part, prohibits an entry from the right. Upon the like principle, the aorta being more distended by a large quantity of blood from the left ventricle, does not allow the pulmonary artery to empty itself into it by the ductus arteriosus.

Sometimes one of these apertures is found open, and the other closed up, especially the ductus arteriosus, which is of the greater consequence; the foramen ovale having in several instances been found pervious in adults; and it is imagined to be always so, in those divers who can remain the better part of an hour under water.

* It is probable, however, that they are not very firmly closed for some time, as I have easily forced the vessels open, by an injection, in children who have died at the end of the month.

Whether the preternatural aperture be in the vessels, auricles, or ventricles, or wheresoever any malformation may be, whenever it may prove of any consequence, the constant symptoms attending it are a discoloration of the face and neck, with a sloe-blue, or leaden colour of the lips, such as is met with in some fits of asthma; and sometimes an unnatural coldness of the body. The discoloration almost always takes place very soon after birth, and is increased, and attended with difficulty of breathing, as often as the child is anywise agitated, whereby he is disposed to throw himself in a horizontal posture. These symptoms are not at all relieved by procuring stools, by the warm-bath, or any other means made use of as a remedy for fits; nor can be, but by the child being kept as tranquil as possible.

If the aperture be in the ductus arteriosus, children usually, but not always, sink very soon under the complaint, and for want, it is imagined, of a due portion of oxygen gas, owing to the full proportion of blood not passing through the lungs. But if the aperture be in the inferior parts of the heart, infants more commonly survive for months, or even for years; although some physiologists have conceived there may be the like disproportion of oxygenated blood. An instance of such prolonged life, with an accurate account of the disease, is recorded in the third volume of the Medical Transactions of the College of Physicians. In such instances, the system having been accustomed to the effects of this derangement, is better able to withstand them; the patient, however, can endure but little motion, the heart becoming thereby surcharged with blood, and respiration being rendered more difficult; hence, also, the blood is detained in the extremities, and the face neck, and hands, become particularly discoloured. Some time, indeed, before the patient sinks under the disease, the symptoms are aggravated, and almost the least motion endangers from suffocation.

SPINA BIFIDA, OR HYDRO-RACHIS.

This morbid affection is more commonly known here by the former of these terms, though the latter is thought by many to be the more proper name: the first being taken only from an effect, the other being descriptive of what is deemed the original disease. It is also known by other names, as writers have been generally impressed by the cause, effects, or the appearance of the disease. Ruysch, therefore, calls it a dropsy, and Bertrandi,* a hernia of the medulla spinalis: the medullary structure being in some instances destroyed, and a spongy substance filling up the cavity of the membrane, and protruding through the bifid spine.

It is remarkable, that this complaint, or mal-formation though now every where to be met with, was not described, as I believe, before Tulpius wrote, whose observations and cases were first published in the year 1641, and, afterwards with some additions, as late as 1716, which is the edition I have seen, and which contains an accurate account of the spina bifida.

Since the above period, the disorder has been regularly noticed by various writers. From the accounts given by them it appears that this disease fixes either upon the superior parts of the spine, and is then seated upon the last vertebra of the neck, and the first of the back; or else is lower down on the last of the loins, or more commonly on the os sacrum, and is usually upon the centre and posterior part of these false vertebræ: but Wepfer† saw one on the right side of the loins.

The skin is sometimes entire, and sometimes ruptured externally at the birth; and in the latter case, I believe, the infant is mostly still-born, at least it has been so in all the instances I have met with; though such foetuses are often full-grown. In this case the edges are prominent, and the centre is of

* Opere di Ambrogio Bertrandi. Tomo ii. Torino, 1786.

† Wepferi Observationes.

course depressed, the ulcer very much resembling the form of the human mouth, when the angles of the lips are drawn together, and the middle part is pushed forward.

When the skin is entire, the disease appears in the form of a tumour, varying in size from that of a pea, or even smaller, to that of half an orange; being also more or less elevated. The highest point is usually very thin, and sometimes transparent, from having no true skin; other parts of the tumour are red or livid, having very much the appearance of some cancerous tumours upon the point of ulceration. The surface is generally very soft to the touch, especially in the centre, from which a fluid retires upon pressure, and round the margin of the swelling the bony edges of the spine may be distinctly felt; a circumstance that ought always to be attended to, as leading to a certain diagnostic. In other cases, no fluctuation is perceptible, but a carneous substance, hard and thick; and such infants cannot endure being laid on the back, but presently become convulsed. Muys mentions an instance of the disease being situated between the scapulæ, in which the skin was not at all discoloured; the deficiency of bone was, therefore, very small, as likewise seems to have been the case from the event, as will be mentioned in its place.

The internal appearances are various; suffice it to say, that as the disease takes place during the process of ossification, the internal arrangement seems to depend very much upon the period at which the complaint may commence. In general, there is a confusion of nerves, blood-vessels, membranes, and ligaments, together either with a hard flesh-like substance, or a certain portion of discoloured lymph. This is, probably, small at first; but the necessary support of bone being wanting, the lymphatics of the membrane investing the spinal marrow, it has been supposed, continually deposit their contents, enlarging the tumour, and increasing the disease. I saw one instance in a fœtus of about five months growth, where the bone (the os sacrum, as yet indeed in a cartilaginous state) was complete on the outside, but deficient within; the spinal marrow was also wanting, and there was a considerable quantity of water.

With regard to the connexions of the nerves with the sac, it appears from the observations of M. Cruveilhier that the two following rules may be laid down.

"1. If the tumour correspond to the two or three upper lumbar vertebræ only, the cord very rarely deviates from its course, and the posterior spinal nerves are generally the only branches which have any connexion with the sac.

"2. If the tumour occupies partly the lumbar, and partly the sacral region, then the cord itself and its nerves will be found intimately connected with the sac."

The greater or lesser degree of paralysis of the inferior extremities, which sometimes accompanies spina bifida, may be generally explained by the connexion of the sac with the cord and its nerves.

Many children, born with this complaint, do not seem to have suffered by it while in utero, being healthy, often large, and very strong; but some are otherwise mutilated, it being not uncommon to find one or both the ankles distorted, or to have the lower extremities weak, and sometimes totally paralytic; and there is in others a great deficiency of bone on the upper part of the cranium. The higher up the seat of the spina bifida may be, the greater is usually the injury, and the sooner the infant perishes, unless the aperture of the bone be very small, which, as has been observed, is sometimes the case.

From what has been said, as well as from a similar disease being occasioned by internal injuries of the spine, as mentioned by Le Cat,* it will appear, that the disease, as hinted above, may be owing to some interruption to the process of ossification, and a consequent distension of the membrane investing the spinal marrow, from the pressure of the fluid, which in return becomes a further impediment to that process. It is not improbable, however, that this undue secretion of lymph may be oftener the original source of the disease: the water, as an unnatural compression, either preventing the formation, or afterwards destroying a portion of the bony arch intended by nature as a protection to the tender marrow, a part essential to the animal functions. Hence Louth has

* *Traité du Mouvement Musculaire; de la Sensibilité, de l'Irritabilité, &c.* 1765.

very properly defined the disease to be, *Aqua in Specu Vertebrarum collecta in Infante, Vertebrae ultimas Columnae Pondere suo findens et Tumorem prope Os Sacrum constituens*; though it does not, as it has been said, appear always in this part.

It is sometimes a mere local disease, confined within the circumference of the tumour, and at others, the water rises a little higher in the vertebral column; and hence Ruysch has considered this disease as a proper dropsy of the part, as the hydrocephalus is of the head. In some instances again, the column is open from the occiput to the os sacrum, and the water is even found to descend from the fourth ventricle of the brain; the two diseases being then conjoined. These disorders have also sometimes been found to succeed each other; several such instances being related by Wepfer and Morgagni. The latter of these writers relates one of a child of four years of age, where a dropsy of the spine succeeded to a hydrocephalus, which had taken place in consequence of a contusion of the head. The former being opened, the tumour of the head in a little time greatly subsided, and upon pressing that part with a hand, a palish ichor rushed out from the aperture in the os coccygis; a circumstance recorded also in other instances; the above infant, he reports, recovered. In another, upon the consolidating of the spina bifida after an aperture had been made, water in a few days began to form in the head, which afterwards enlarged to a very considerable size. On the other hand, it has been noticed, that there is sometimes no water, but the bony column is filled up with a carneous substance, or spongy marrow, and the complaint is then termed a hernia of the spinal marrow, agreeable to a similar congenite disease of the head, which has been aptly called a hernia of the brain. In this case, some malformation of the spinal marrow may be considered as the original disease, unless it be supposed, that the proper cause exists in some interruption given to the process of ossification; whereby the medulla being deranged for want of its natural support, is in consequence distempered.

The disease becomes fatal in consequence of the tumour

being opened, or the integuments otherwise giving way, which is usually from a little slough, or gangrene, forming upon the thinner parts, which soon spreads wider and deeper, and so opens a way for the escape of the lymph. In a few days afterwards, and usually on the third, the infant dies, unless the parts should soon close again; which has but very rarely happened. A remote cause of the child's death then seems to be the escape of the lymph, which is frequently soon followed by a strong convulsion, in which the little sufferer expires. But where the integuments have remained entire for any length of time, their rupture has been followed by hectic fever and marasmus, in consequence of a profuse drain from the part. But it is more common for the little patient to die either in a few days, or a week or two after birth, and then, probably, from some morbid change taking place in the medulla spinalis, from the admission of air, which is supposed to be always injurious to internal parts, and more particularly to membranous ones, and therefore must be peculiarly offensive to the spinal marrow and its sensible covering. These parts have, indeed, suffered from the birth, from the nature of the disorder, and it is not therefore to be wondered at, that such infants are more or less convulsed, and appear several times to be dying, before that event actually takes place, and that they are often otherwise ill; though some children appear pretty well till the integuments give way. I remember one child who would not take the breast for twenty-seven days, and was several times thought to be dying; but afterwards taking to it properly, was greatly recruited; appearing, except for this disease, in a promising way, and lived four weeks afterwards. The late Mr. Hunter told me, that he had seen a child living with the disease at the age of eighteen months; and one born at the British Lying-in Hospital was alive when six years old. A case is reported by the French Royal Society of Medicine, in which the tumour was opened when the sufferer was twelve years of age, soon after which the tumour is said to have grown up again; but being ruptured eight years afterwards, by the patient accidentally lying upon it, after it had increased to the size of a

child's head, the humour was absorbed, and a firm cicatrix being formed, the patient survived.

From these cases, and that of an infant, eighteen months old, in a family of high rank, where the best advice had been sought, I have entertained some doubts whether tumours precisely of the like appearance, are as precisely of the like kind, or whether there be in them all a deficiency of bone; it having been the opinion of several of the first physicians and surgeons in repeated consultations, that the case in this infant was not precisely the spina bifida.

The above account was drawn up in a preceding edition, in 1811; ever since which, it has been determined in every consultation to leave the matter to nature. The child is still living, (1819,) and in perfect health and good spirits, and runs about, and climbs up a chair or sofa as pleasantly as the rest of the children; but the tumour is greatly increased in size and hardness, while the only uneasiness the child seems to sustain, is that it does not appear to sit down so pleasantly as the others. It is abundantly proved that an integrity of all the functions may occasionally exist even where the tumour is of considerable size; for many instances are recorded of persons affected with such tumour who are now at the respective ages of 17, 18, 19, 20, 21, and even 50 years. Various measures have been proposed for the removal of this congenital disease. Mr. B. Bell says that the tumour often proceeds from deficiency of the spinal marrow, or its membranes.

No means of cure will, probably, ever be discovered; but if the tumour take place in consequence of the imperfection or deficiency of the bones, it is a question whether it would not be proper to tie the base of the tumour with a ligature, and after its detachment to keep a soft compress on the part with a proper bandage. Compression and puncture were originally proposed by Mr. Abernethy, from the idea that the former would supply that which was wanting in consequence of the incomplete state of the vertebral canal, and were the fluid to continue to increase, notwithstanding this pressure, to let out a portion of it at different intervals, by means of punc-

ture with a finely cutting instrument. Both these plans have been successfully carried into effect by Sir A. Cooper. He applied pressure by means of a concave mould of plaster of Paris fitted to the tumour, and lined with lint, and kept on by a roller. Subsequently when the fluid had retired within the spine, a truss was applied. Mr. North relates a similar case of a female now arrived at adult age, and able to perform the duties of a servant. In the case treated by puncture, Sir Astley Cooper let out the fluid by means of a needle at intervals of three or four days, pressure being at the same time applied by means of a roller and a piece of pasteboard. In a little more than four months the tumour became solid, (from January 21st to May 2nd, 1809) from the effects of adhesive inflammation in its envelopes, and the child was relieved from all inconvenience. See *Med. Chir. Transactions*, vol. ii. Both the above patients were alive and well twenty-eight years afterwards. A successful case by puncture is related in *Braithwaite's retrospect*, vol. 9. More recently, M. Dubourg has related two successful cases in which the tumours were removed by the knife, and the lips of the wound brought together by hare-lip pins and sutures. In one case the tumour was situated in the loins; in the other, at the lower part of the cervical region. Mr. Prescott Hewitt, in *Med. Gazette*, July 5th, 1844, says, "This success ought not to lead any surgeon to adopt so rash a practice; for, laying aside the question of thus opening the theca vertebralis, there still remains the fact, that in the majority of cases some nerves are connected with the sac, and that when the sac corresponds with the sacrum, the cord itself is generally connected with the tumour." On examination after the operation no nerves even were connected with the sacs.

In managing these cases shortly after birth, our object must be to guard the tumours from pressure or irritation, and they may be bathed with some mildly astringent lotion, or dusted with prepared chalk, or hair powder; and at a subsequent period, pressure, either with or without puncture, as thought most applicable to the particular case, may be tried with rational hopes of success.

[In a case of spina bifida, which occurred in the practice of Mr. Evans, of Hampstead, pressure upon the tumour always induced attacks similar to the convulsions of croup. The infant was carefully preserved from the pressure which would be induced by the supine recumbent posture.—M. H.]

PARENCHYMATOUS TUMOURS.

The resemblance which some of these bear to the last-mentioned disorder renders them worthy of particular notice, as they are not always easily distinguished from it. They appear on different parts of the spine, but more commonly near the neck, or the os sacrum; are accounted *marks*, and are often of a morbid nature, and it is imagined would not unfrequently prove fatal if left to themselves. As I design, however, to treat only of such as will admit of some remedy, I shall mention but two.

The first is a tumour on some of the vertebræ, usually of the neck, or the first of the back; it is of a sublivid hue, unequal, internally spongy, and very vascular. I saw one of this kind some years ago, in consultation with the late Sir Cæsar Hawkins, who advised to preserve the skin unbroken, as long as it should be possible, which he feared was all that could be done for it; and to this end recommended the free use of the compound water of acetated litharge. It was then about the size of a crown piece, and not raised very much above the level of the surrounding parts. The tumour, however, increased, and the skin not long afterwards gave way, and the child became ill; in consequence of which, the late Dr. Hunter was desired to give his opinion, who advised the extirpation of the tumour as the only chance of preserving the child's life; but the father disapproved of the operation. The part soon began to bleed a good deal at times; in order to suppress which, as well as to lessen the tumour, which was now considerably more prominent, I sprinkled it with the following powder.

R.—Bol. Armen. Pulv. Catechu. ā ʒij. Alumin. ʒj. Misce.
Over this, compresses, wetted as above, were applied fre-

quently through the day. These would sometimes adhere for several days, owing to the blood and powder forming a sort of paste, till a fresh oozing from the vessels loosened them; at which time the bleeding returned, and the applications were repeated; by the continuance of which, however, for seven or eight weeks, and compression with a piece of thin lead, the vessels gradually shrunk, and the discharge being dried up, the part was happily skinned over, and the child recovered its health.

I have seen another tumour of this kind, which was treated in a different manner. It was seated on the last vertebra of the back, and was apprehended to be the true spina bifida: but as no margin of bone could be distinctly felt, nor the tumour, by pressure, be made to recede, I hoped it might be otherwise, and ventured to advise taking it off. This was accordingly done when the child was about eight days old, and though a good deal of blood was lost in the operation, from a deep-seated artery, the sore at the end of the month was perfectly healed, and the child soon afterwards became as healthy as any other in the family.

HEPARTOMPHALOS, AND HERNIA VENTRALIS.

The congenite ventral hernia, in which, from a deficiency of muscular integuments and skin, some of the abdominal viscera, and not unfrequently the liver, is protruded, is very often met with in abortions in the earlier months; though less commonly in the full-grown foetus. I have never seen it in living children, unless in that instance of it termed hepartomphalos, which is the more immediate subject of this section, and will be clearly exemplified in the annexed case.

In the true hepartomphalos, however, there is, possibly, no actual deficiency of the muscular or ligamentous integuments, and still more probably not of the skin; but as the term strictly implies, some part of the liver forms a congenite hernia of the navel. The liver, while very small, is, as I conceive, somewise drawn down by the vessels of the umbilicus which enter it, possibly by some action of the foetus; or, (as it

has lately been said by Lassus on the umbilical hernia,) the liver is preternaturally large and heavy, through its receiving an undue proportion of blood from the vena umbilicalis, and is thereby protruded at the muscular ring in the linea alba, and falls into the funis umbilicalis, which it dilates and distempers. This disease is a very rare one, I believe, in living children, and I had met with no written account of it, until Dr. Combe put into my hands a Thesis de Hepartomphalocoele Congenita, by Francisc. Henricus Rockholtz, printed anno 1768.

The case there related corresponds exactly with the one I met with, and both the infants survived the disease; but some months afterwards, dying of other complaints, and their bodies being carefully examined, the fact is established, and demonstrates the powers of the animal machine, in removing obstacles to its well doing, that might be thought insurmountable.

The subject of the present case being born in the neighbourhood of the British Lying-in Hospital, was brought there for the advice of the physicians on a day when I was in attendance. The child was then eight days old, and the nurse informed me that the tumour still remained of the exact size it had acquired when the infant came into the world; but that previous to the binding it down tight, the skin had seemed to be thinner, but was even at that time discoloured, though it had a kind of transparency, as if it contained a fluid; and that the next day it turned black.

The dry funis was now hanging from the centre of the tumour, which was as large as a good-sized china orange, and was black; and the skin, as I thought, in a sphacelated state.

Whether this tumour contained the liver, or any of the intestines, I could not at all determine; or whether it might be a mere parenchymatous enlargement of the funis umbilicalis, of which I had lately seen an uncommon instance of about one third of this size; but in that, the enlargement commenced about three or four inches from the belly.

I had little doubt, however, from the size and colour of the

tumour, that in the present instance the infant would die in a few days, or, at least, soon after the integuments should give way, as it appeared highly probable there would then be an opening into the cavity of the abdomen. I directed nothing, therefore, but a bread-and-milk poultice, and this merely in the view of its being a soft cushion for the tumour to rest upon, which did not, however, appear to be very sensible, though the infant cried much upon being moved, as if it were thereby put to pain.

Four days afterwards the child was brought again to the hospital. There was then but little change in the appearance of the tumour, nor much discharge from it, and the child having taken kindly to the breast, had a healthy appearance; so that, save from the suspicion arising from the nature of the tumour, it seemed very likely to live. Half an ounce of the decoction of bark was directed to be given to it three times a day.

I did not see the infant again for three weeks; and it was then near five weeks old. I now learned that the child had thriven so well, the parents were satisfied it was likely to live; and that the funis had fallen off on the fifteenth day without the occurrence of any unpleasant symptom. That the tumour had burst about a week after the funis came off, from which time the swelling had sensibly subsided as the discharge kept up; and that at the end of the month the discoloured integuments all sloughed off, and left a superficial sore of the size of a small tea-cup, to use the mother's expression.

The poultice was directed to be continued until I should see the infant again, which was about a week afterwards. There was then an oblong, benign ulcer, about the size of a sixpence, and disposed to heal up. I now desired the poultice might be left off, and only to apply a bit of *cerat. à lapide calamin.* and moderate compress. By these means the sore was healed when the infant was eight weeks old; soon after which I saw the child in perfect health.

The integuments at this time had not the usual appearance of the navel, but were, on the contrary, thin and a little elevated, but without any thing like an umbilical hernia. The

scar was not larger than a sixpence, and was not precisely in the middle of the abdomen, but a little on the left side of the point from which the funis naturally rises.

From the disagreeable appearance of this case when the infant was first presented at the hospital, such a termination was very pleasant to us, as it leads to encouragement concerning other obscure diseases; and manifests what unexpected things nature is capable of effecting, even at this early period, when not interrupted by any improper treatment.

The infant fell a sacrifice, about six months after birth, to another disease; in consequence of which its body was afterwards carefully examined by Dr. Marshall. Dr. Combe happening to hear of it, was present, and informed me that there could be no doubt of the liver having occasioned the tumour we had seen: there being yet a sensible depression remaining, evidently marking the stricture made upon it by the linea alba and recti muscles, which had included about one third of its left lobe. Since the former impression of this work, I have met with another instance of the hepatomphalos, in a full-grown, but still-born foetus; the complaint being also ascertained by an examination of the parts.

Whence it should come to pass, that infants should not only be born alive with, but survive, the hepatomphalos, rather than the common ventral congenite hernia, or a large congenite exomphalos of the intestine, may be worthy of inquiry in this place. And the reason probably may be, that in the hernia ventralis congenita, whether from the protrusion of the liver, or any other of the abdominal viscera, there must be a deficiency of the muscular and other coverings of the abdomen, and therefore nothing to support or defend the protruded organs so essential to life, but the thin peritoneal expansion. But that, in the former there is, perhaps, no actual loss of substance, but a mere dilatation of the parts; the liver being at the same time defended by the strong expansion of the funis umbilicalis, which does not give way after birth, until nature has had sufficient time to withdraw that viscus into the cavity of the abdomen. This, it is imagined, is effected not only by the removal of the first cause of

its descent, but also by that respiration which takes place immediately on the birth, and is further assisted by the ligament by which the liver is attached to the diaphragm, and by means of which it is mechanically drawn up, during every expiration.

EXTERNAL BLEMISHES, OR DISORDERS, SUPPOSED TO BE MARKS
OF THE MOTHER.

Though it be beyond the present purpose to treat in detail on surgical operations, I shall beg leave to notice a circumstance or two relative to that for the hare-lip, as I have already done with respect to a few others, which frequent opportunities of comparing the different success attending them have furnished. I shall afterwards advert to some other equally common blemishes, in a view to assisting the younger part of my readers to combat the unhappy prejudices of mothers in relation to marking their children. This, unfortunately for themselves, they are always disposed to attribute to a violent impression from the sight of some disagreeable object, or to a disappointment in something they may have longed for during their pregnancy.

The repeated experience of every attentive observer has uniformly militated against the tormenting suspicion alluded to; but still it prevails, though only to the injury of those who ought, for their own sakes, to be persuaded to the contrary. Every man long in business, has known many instances of mothers, tormenting themselves for six or seven months, in the painful apprehension of discovering some sad blemish in the child, and on this account have trembled to look on it when it has come into the world, which has afterwards proved to be as perfect as they could have wished, and as the more dispassionate amongst their friends have all along ventured to foretell. On the other hand, where children have been born with some real blemish, it has not been suspected by the mother.*

* Among several instances of such blemishes in children born in the British Lying-in Hospital, we have had some remarkable ones of the entire absence of any supposed cause. In one, the infant was more marked than almost any one I had ever seen; but I shall notice only that the eye-lids, part of the nose and temple, and the greater part of one of the cheeks, were as black as ink, and exactly resembled a dry gangrene of the parts. In another instance, the extremities were uncommonly

That there are blemishes which bear a resemblance to various objects around us, daily experience has proved; though the precise occasion of them is not, perhaps, understood. The like deviations from the ordinary course is observed, not only in various other animals,* and that not unfrequently, but also in the vegetable kingdom; in which the supposed influence can have no place. Thus, fruits are often joined together and discoloured, having excrescences, and odd shapes, offering strange representations resembling animals, as well as anomalous irregularities, similar to those found on the bodies of infants; all, doubtless, proceeding from the established laws of motion, though not well understood by us.

The laws of motion will also equally account for the mutilation, and want of parts, the growth of which is somewise interrupted; it being well known, that the several members and parts of the body are not all formed or unfolded at once, but are pushed forward in their turn after some established law of nature, and organic matter. If, therefore, a due proportion of nourishment be withheld from any part, its proportionate growth is suppressed, or its formation entirely prevented. The like process takes place in flowers;—thus, if a rose-bud, for instance, be blighted, some of its leaves are found curled up, and the flower turns out ill-shaped; or perhaps it is so much injured, and the bud so far withered, that only a few leaves appear, the rest being never completely formed, or unfolded. Hence, the hare-lip; the two sides of the face, which

ill-formed, not unlike those of aquatics; but the mothers of these infants had gone on to their full time, without having received any fright they could recollect, or suspecting any thing amiss in their children.

In this view, I cannot help observing, that a few years ago a lady of rank acquainted me, that she had passed almost the whole term of gestation in the apprehension of her infant being born with a hare-lip, on account of her having been daily met by a labourer working in her own grounds, who had such a blemish. In this instance, the imagination seemed to have done its utmost, as the lady conceived she met with this man oftener than any other, and that she could not avoid him, walk whichever way she might; and in consequence had his image continually before her, either in reality or in recollection; and being kept under a continual alarm by it, in the end declined walking at all in the garden. After the opinion I have advanced, it may be needless to add, that her child was born free from the apprehended, or any other, blemish.

* See Mr. John Hunter on the Free Martin.

are said to be formed separately, being hereby prevented from growing together;* the upper lip is, at least, one of the last parts that come into coalition. For the like reason it is, that infants come into the world with large ventral herniæ, the union of the muscular parietes, and especially the skin, being one of the last processes in the embryo.† But whatsoever may be the weight of these observations, there is certainly nothing that we know of in a fright or longing, that can produce such a change in organized matter, or can operate in a manner that has been supposed, much less at such different periods; but there is, on the other hand, every thing against such an hypothesis; which has accordingly always given way in enlightened ages.

It is well observed by Dr. Blondell, that were a due catalogue drawn up of all the irregularities discovered at the birth, that are supposed to proceed from the mother's imagination, they would appear to be the same over and over again, with no great difference, and very capable of being reduced into certain classes. Does not this intimate, that they proceed from the laws of motion, and the structure of the organs? There are besides many considerable deformities, which are never referred to the imagination, viz. the irregular conformation of the viscera, &c. Is the whole empire of the microcosm so divided between Nature and the Imagination, that one rules within, and the other governs the outward parts?

The foetus is also a distinct individuum; it has the circulation of the blood independent of the mother; its own genus nervosum; a separate secretion of juices, and all the functions of animal economy in itself. On this account, we see a feeble mother bearing a very strong and lusty child, and vice versâ; the mother being to her infant, what the earth is to a plant: the latter being strong, may not be injured by being moved into a different soil: or being tender, may, or may not, be benefited by it.

Children have likewise diseases of their own while in utero,

* For further remarks on this subject, the reader is referred to a paper written by Mr. Lucas, of Leeds, in the Memoirs of the Medical Society of London, vol. iv.

† Harvey, Exer. 56 and 69.

such as cataract and gutta serena, varices, aneurisms, hydrocephalus; they are born blind, deaf, &c.

The instance so often adduced from the sacred historian in opposition to such arguments,* is by no means in point; for without adverting to the very peculiar physical circumstances in that transaction, which are wanting in ordinary instances, it is sufficient to observe, that there was therein an evident supernatural interposition. Should any one in this sceptical age doubt of this, he has only to make a similar experiment, the result of which will, probably, have more weight than ten thousand arguments.† As matter of fact, therefore, as before observed, does not at all countenance, but directly contradict the hypothesis, there is good ground for married women being argued out of such fears, and delivered from that painful conflict for weeks and months together which so many of them endure. It will give me great pleasure if any thing I have advanced on the subject should answer so desirable an end; whilst reason, philosophy, experience, and every thing on which we ought to depend, conspire to support such an attempt.

[Mr. Lawrence has published a very instructive and elaborate paper, on the subject of deviations from the ordinary formation of parts, in the fifth volume of the *Medico-Chirurgical Transactions*.—S. M.]

HARE LIP.

Amongst the various marks resembling some of the objects around us is the most common, forming a blemish too well known to require a detailed description. It is sufficient to observe, that it is of two kinds: the simple, wherein the upper lip only is divided, either wholly or in part, with loss of sub-

* Genesis, chap. 30, ver. 37—42.

† Though I have ventured to say this, it is probable, there was also a coincidence of circumstances, although not in the manner vulgarly conceived of.—For many critical and satisfactory remarks, however, on the above passage of holy writ, the more curious reader may consult a learned tract, on the *Strength of the Imagination in Pregnant Women*, written by Dr. Blondel, a Member of the College of Physicians, anno 1727.

stance; and the complex, in which the fissure of the lip is double: in some instances, the portion between the fissures is likewise too small to fill up the cavity, and in some it adheres to the very tip of the nose; and in a few instances, both lips are affected; the upper jaw, also, with the palate of the mouth, and even the uvula are sometimes divided. It would be beside my purpose to treat of the manner in which this deformity and defection is to be remedied, especially as that must vary considerably in different cases; I shall confine myself to speaking only of the time in which it ought to be attempted.

Various considerations contribute to make the distressed parent solicitous to have this blemish removed soon after the infant is born, or at furthest before the month shall be expired. On this account, I am convinced, the operation has sometimes been prematurely performed, contrary to the better judgment of the operator, and the child has thereby fallen a sacrifice; whilst others have received much less benefit than they would have done had the operation been postponed for a reasonable time. Where the blemish is very trifling indeed, and the operation simple, it may, in many cases, be done with safety in the course of the month, or a little after; and if the child be able to suck, which is not always the case, there are even some advantages in performing it sooner. For as the child will not be able so suck for two days at least after the operation, it will with difficulty be kept tolerably quiet by the spoon after it has been once put to the breast; but as infants need but very little nourishment for the first days after birth, and generally sleep a good deal, if the operation be done twenty-four hours after the child is born, it will be in a condition to suck by the time it requires much nourishment, and the mother's breast is prepared to furnish it. But in the complex hare-lip the case is exceedingly different, the longer the operation is postponed, the better it is likely to succeed; and it should be deferred till the child should be, at least, four or five months old. By this time, also, the infant will have got over the period in which it is peculiarly liable to several painful and dangerous complaints; will be thoroughly weaned from its hankering after the breast, and have learned to feed

contentedly with the spoon; by which children with this kind of hare-lip are obliged to be supported, they being generally unable to suck. At this period likewise, the parts will have acquired such a size as will admit of handling them to greater advantage, as well as a degree of firmness necessary to retain the needles; for the want of which, though the operation may appear to have been favourably performed, the needles will sometimes break out, and the deformity be but little removed, or perhaps sometimes increased.

I have once seen another blemish of the mouth, in a child born at the hospital, which required a similar operation. In this infant, the mouth was much wider on one side than on the other, and appeared as if it had been divided far into the cheek, which occasioned a very awkward appearance; but as it was capable of being remedied in the same manner as the hare-lip, I shall only observe, that when I withdrew the pins on the third day, the parts adhered very firmly, and the child left the hospital at the usual time.

NÆVI MATERNI.

Under the term *Nævi* are comprehended all congenital stains, spots, and other deviations of a part of the skin from its natural state. Although these are extremely diversified, they may be arranged under two forms or varieties; one consisting of congenital alterations of the colouring matter of the skin; the other of vascular productions, and often of a new growth.

The most common forms are merely superficial or stain-like spots, and appear to consist of a partial thickening of the rete mucosum; they are of various hues, as yellow, brown, red, livid, or black: these have been named *cutaneous nævi spili*, or *moles*. Those usually called moles frequently have irregular hairs growing on them; the surfaces of others are streaked or granulated; those that appear in the form of a red purplish stain, are spoken of as claret or red-wine marks, those that are brown as mice or rats; while the granulated ones having some fancied resemblance to raspberries, strawberries, or mulberries, becoming, like them, of a deeper red in summer, are

named accordingly. The small blood-vessels being more numerous, or nearer the surface, such discolourations would be greater in summer than in winter, the cutaneous vessels being then more turgid with blood. The like change takes place in every mark on the face, when the person cries or is made angry, or when by any other means the blood is made suddenly to ascend to the head, or to rest there longer than usual. All such appearances are therefore very easily accounted for, without supposing them the consequence of the parent having longed for such fruits as ripen or grow red in the summer months. We observe also similar changes in adults from long continued severe exercise, or hard drinking; many people, before of a fair complexion, suddenly acquiring a red face.

These *nævi* have none, or scarcely any, perceptible elevation above the skin, and generally continue stationary during life, without causing any injury, except from their unsightliness. We know of no means by which they can be removed without being productive of more deformity than the original mark, and therefore think it better not to interfere with them. In a note to the fourth edition of their work, Drs. Maunsell and Evanson say, "Dr. Fränkel, in his German translation of this work, mentions a proposal for the treatment of this form of *Nævus*, which was communicated by Dr. Paulli, of Landau, to the meeting of the German Naturalists and Physicians, held at Stuttgart, in 1834. Dr. P.'s plan consists in tattooing the *nævus* with needles and a white pigment, in a manner similar to that adopted by the South Sea Islanders, and often by sailors in our own country. Dr. Fränkel states, that Dr. Paulli succeeded in this operation in several instances. The tattooing must be proceeded with gradually, and caution observed not to make the puncture too deep. We are not aware of the nature of the pigment used."

Vascular Nævi, the second variety, are frequently spoken of as erectile tumours, resembling aneurism by anastomosis. They exhibit various degrees of thickening and altered structure of the skin itself, and consist of clusters of enlarged and contorted blood-vessels freely anastomosing and forming little sacs of blood. They are always more or less elevated above the sur-

rounding skin, and are of various forms and colours; mostly of a purplish red colour. They may be situated on any part of the body, and spread over a greater or lesser extent of surface, occasionally covering even the whole of an extremity: sometimes they are observed on the lips or labia pudendi; and occasionally they are raised on a neck or pedicle. A particular disposition to their formation exists in some families. Any circumstance which accelerates the circulation may increase their bulk and heighten their colour, by producing a greater determination of blood to the surface; and as the skin covering them is usually very thin, they occasionally burst, and alarming hemorrhages ensue. They are for the most part prone to enlarge quickly, and one the size of a pin's head on its first appearance, will be as large as a sixpence in a year;—hence surgical aid is required for their removal. The principles upon which this aid is to be afforded are threefold:—

1st. Obliteration by pressure. 2nd. Excision or extirpation by the knife. 3rd. By exciting the adhesive inflammation in them by various means.

The earlier they are removed the better; and care should be taken to extirpate the adventitious structure thoroughly, so that there shall be no return, for reproduction of the disease has frequently followed where the operation has been imperfectly performed.

The principal methods of fulfilling the beforementioned intentions are,—

1. The application of cold and pressure, proposed by Mr. Abernethy. 2. Vaccination, by Mr. Hodgson. 3. Excision, by Mr. J. Bell. 4. The ligature, by J. Bell, Mr. White, and Mr. Lawrence. 5. The application of nitric acid, by Sir B. Brodie; or of the potassa, by Mr. Wardsop. 6. The ligature of the principal artery which supplies the *nævus*. 7. Application of needles, by Dr. Hall; and of red-hot needles, by professor Pattisson, of New York.† 8. Friction, with croton oil or tartar emetic ointment.

* Medical Chirurgical Transactions, vol. ix., x., xiii.

† London and Edinburgh Monthly Journal of Medical Science, June, 1842.

The situation and magnitude of the *nævus* will have considerable influence on the selection of the mode of treatment.

In the small ones free vaccination, or a minute's application of the potassa will frequently answer. When situated on an extremity, *nævi*, even of some magnitude, will be obliterated by continued and moderately firm pressure, with strips of adhesive plaster: where the operation is admissible, excision by the knife has advantages over all others: where hemorrhage is a consideration, extirpation, by one or two double ligatures, or cross-pins, may be preferable. The "exceptions to excision, or extirpation, are those cases where the tumour seems to derive its supply of blood from some large artery, the trunk of which will admit of being tied." Where the tumour occupies a great extent of surface, the application of nitric acid may be preferable: puncturing the tumour all over with a sharp-pointed glass pen, repeatedly charged with the acid, has been most successfully performed by Sir B. Brodie.

[Can we devise a mode of treatment in these cases, which shall, without the danger of inducing ulceration or sloughing, be efficient in the cure, applicable to all circumstances and localities of the disease—to parts not admitting of pressure, and to parts so deeply seated as to be removed from the action of vaccination, and not to admit of the ligature, or of excision? All these objects may, I think, be attained by a simple operation: this operation is calculated to induce the slow adhesive inflammation in parts of low vitality, avoiding the destructive processes of ulceration or sloughing; it is applicable to any part not admitting of pressure, as the eye-lid, the lip, the tongue, the labia pudendi.

It only requires to be done thoroughly, to be repeated often enough, and to be followed by sufficient delay for processes, necessarily slow, to be established and completed.

It seems long to wait weeks and months for the completion of nature's operations. Yet it is distinctly proved that that which cannot be accomplished in the present case, in *one* month, or in *two* months, is so in *six*. And if any part be left uncured, the remedy is as simple as it is easy and efficacious.

The mode of cure to which I have alluded, consists in passing a needle of moderate but sufficient size, and with cutting edges, through the *nævus*, so frequently as to induce the adhesive inflammation with the deposition of lymph, and so as to obliterate and consolidate the vessels of which it is composed, yet so seldom as to incur no risk of inducing sloughing. The needle must be passed in several directions from one point in the circumference of the *nævus*, to several points more or less opposite. These punctures or incisions must be made near the surface in the superficial arterial *nævus*; but in a place more or less deeply seated, in cases of the deeper capillary *nævus*.

The operation must be *repeated* at distinct intervals of *two, three, or four months*, according to the state of the case, and progress of the cure; this is not of the slightest consequence, for the operation neither inflicts pain nor occasions hæmorrhagy of any moment; or the whole *nævus* may be divided at two distinct operations, by severing alternate portions, after any convenient interval of time.

The object of this proposition is to avoid *pain, hæmorrhage, and scar*. Its principle is this: to substitute *cicatrix* for the nervous tissue. In fact, whatever may be done, sacrificing the skin, may be done preserving it, whether this be accomplished by *punctures, incisions, or even by ligature*. The sole difficulty in the proposition is the length of time required for nature's operations: patients and even surgeons are unwilling to wait, and wait they must, if the cure depends upon the establishment of adhesive inflammation and the deposit of lymph.—M. H.]

TUMOURS AND SUPERFLUOUS PARTS.

A different kind of blemish consists of little tumours and superfluous parts without any discolouration of the surface. The former lie more or less deep under the skin, and consist of extravasated lymph, hardened fat, or indurated glands. Some of these likewise may be effaced merely by compression, while others can be removed only by caustic or excision. Pendulous parts sometimes adhere only by a small base, like

a thread, and may then be removed by merely passing a tight ligature round them. But should any even adhere more firmly, and be only a small joint, such as a finger or toe, it were better to have it taken off on the first days; as the vessels will then bleed but little, and the gristles, by which such joints are usually connected have not yet become bony. But should the part be more completely formed, it may be necessary to delay the operation awhile longer, that by discovering which of the duplicates may take the lead, the more promising one may be preserved; which is not always to be known with certainty at the birth.

UNUSUAL FIGURES OF THE PARTS.

I notice these trifling blemishes with a peculiar satisfaction, from the experience that nature alone is able to remedy them in certain instances wherein I had previously conceived that some considerable recourse to art would be necessary. These blemishes more commonly occur in some parts about the head, particularly the ears and nose. The latter of these is certainly of the more importance; and is sometimes turned greatly on one side, with one of the nostrils opened very largely, and the other compressed. Suffice it to say, that after trying what might be done by plaster, bandage, and other contrivances, nature alone, by the force of the circulating juices, has brought the parts, in the course of a few weeks, to their proper form.

BLEMISHES AFTER BIRTH.

Before I quit this part of the subject, it will be proper to notice other maculæ that arise after the infant is born; but these are not very common. They consist of small red, or black spots, about the face, and I believe are disposed to increase in size, and should therefore be early removed by the point of a lancet, as may then be easily done.

IMPERFORATE VAGINA.

The vagina is sometimes imperforate on the external, at others only in the more internal parts; and in different de-

grees. Imperforation of the hymen demands no interference till the age of puberty, and needs therefore merely to be mentioned here, especially as it requires only a simple, or crucial incision, and to preserve the orifice open. Where the imperforation is in the substance of the vagina itself, I have never found an operation to be of any use, though I have known it attempted, in the adult, with great address and resolution.

In imperforation of the orifice of the labia, I have of late years altogether rejected the assistance of the lancet, the parts being very easily separated by the fingers even in children of several years old. It is not improbable that the like method might succeed, though the operation should be neglected till the time of puberty, the parts seeming rather to adhere in consequence of some very slight inflammation, than to have been originally ill-formed. A mere oozing of blood is perceived in consequence of this mode of separating the labia, which in the present instance, at least, seems preferable to incision, and may possibly afford less pain to the infant, as well as be less unpleasant in idea to its parents.

It is in this instance peculiarly important, that practitioners in midwifery, and others attending at the birth, should examine infants very attentively in regard to this complaint, which may be otherwise overlooked; the defect proving no obstacle to the natural excretions. I have met with several instances of it in children from three to six years old, in whom the complaint was but newly discovered, and it has been in others, neglected to the time of puberty, and even of marriage, and must then prove of serious consequence, and may even be attended with hazard:* though I met with one instance in which nature alone overcame it in the hour of labour.

[In those cases the malformation was probably of recent date. In the great majority of instances of vaginal closure, which have fallen under my observation, I have been quite satisfied, that the membrane closing up the parts, was not congenital, but adventitious, arising from excoriation of the labia, and ending in the adhesion of the inflamed parts. In

* See Henrici a Mornishen *Observationes Medico-Chirurgicæ. Dresdæ, 1691.*

one case the inflammatory adhesion had completely closed up the parts for more than twenty-four hours, during which time the child had not passed a single drop of urine. This was the only case in which I have ever found it necessary to use a scalpel for the purpose of dividing the parts. In other cases there is one small opening, at least, into which a probe may be passed, and the adhering edges are easily broken down by it. This closure has been absurdly mistaken for imperforate hymen. *Mr. Howship*, in his *Observations in Surgery and Morbid Anatomy*, gives an accurate history of the closure of the labia. S. M.]

The rectum likewise is sometimes found opening into the vagina; a case that affords but little prospect of relief. It should, however, be attempted; but the kind of operation must depend so much upon circumstances, that it cannot be here pointed out with any precision.

IMPERFORATE ANUS.

The anus is sometimes closed only by a thin membrane, so that the day after birth the meconium may be distinctly felt, and in a manner seen shining through it. *Zuingerus** reports such a case, which was relieved by only a slight puncture with a lancet, and passing the point of a finger into the bowel, for two or three days afterwards:—a bougie would be a more proper instrument.

But more commonly the imperforate anus is a melancholy case, as it seldom allows of an effectual remedy, the gut often terminating in a cul de sac so high up as not to be reached; it is not, however, always to be despaired of, though no fluctuation of the intestinal contents should be felt for two or three days after the infant is born.

Though this sad defect is not very uncommon, I remember only two cases of the kind in live-born children at the Lying-in-Hospital. One of these it fell to my lot to attend, and I happened to succeed, contrary, indeed, to all expectation, and

* *Theodor. Zuingerus, Basil. 1722.*

after the child had puked up a great quantity of meconium, and not only the belly, but also the face, was become exceedingly tumid, and the eyes had not been opened for some time.

The manner of doing this operation must, in different cases, depend so much on the discretion of the operator, that I shall do no more than describe that which I made use of in the instance alluded to; and this may possibly be acceptable, as the operation is not often performed with success.

[In two cases a perfect cure was effected; these children were both operated upon by the late Mr. Chevalier, who with a scalpel made a very free incision through the integuments, till he distinctly felt the fluctuation of meconium in the rectum; he then carried his instrument through the membranous expansion, or pouch, in which, in these cases, the rectum generally terminates; taking care, effectually, to divide it by a crucial incision; thus completely destroying its valvular structure. Both these children recovered without difficulty, and possessed the faculty of retaining, or expelling the fæces, nearly as well as if no malformation had ever existed. One of them is now fifteen years of age.—S. M.]

It may be previously observed, that it ought to be postponed as long as it safely can, that the depending part of the bowel may be distended, and pushed as low down as possible; the reason for which is sufficiently obvious: and to this delay I am much inclined to attribute the success with which it was followed in the operation I performed.

This was not determined upon by my colleagues till the third day. A longitudinal incision was then made, of about half an inch, above and below the part where the anus ought to have been, which was marked by a little excrescence; a small bistoury was afterwards thrust up in the usual direction of the bowel for more than an inch. No meconium following this puncture, I examined carefully with my finger, and feeling something like the fluctuation meconium would make, I introduced a trocar, and withdrawing my finger, I carried up the instrument in such a direction as to avoid injuring the bladder, or forcing the point against the os coccygis, for near an inch further; making allowance, however, for the

yielding of the parts, which might be somewhat forced up by the trocar. The instrument having now passed forwards without that resistance it had hitherto met with, gave me the sensation of having entered a cavity; when withdrawing the trocar, we had the satisfaction of finding the meconium running out at the canula. The child was now put into a warm-bath up to the waist, and in a few minutes, having voided a considerable quantity of meconium, it opened its eyes, looked cheerfully about, and fell into a pleasant sleep before it was taken out of the bath.

A piece of bougie was occasionally introduced, and sometimes left in the part for a few hours, for the first fortnight; after which the child recovered fast, and at the usual time was taken from the hospital in pretty good health, though it had been much reduced by a bad thrush, which unfortunately made its appearance soon after the operation; but it always voided its stools perfectly well.*

IMPERFORATE PENIS.

The imperforate penis is not quite so common a case; but is not unfrequently suspected when the aperture of the passage is merely stopped up by a little mucus: it should therefore be examined in good time. In this case washing the part with warm milk and water, or at most a little assistance with a small probe, or any such blunt-pointed instrument, will be sufficient to open the passage. But it is evident, if the urethra be wanting, no operation can be undertaken; it is, however, more commonly found open a certain way, and often as far as the basis of the glans, and sometimes near to its extremity; in which last instance, it is necessary only to make a small aperture with a lancet, or a fine trocar, and to keep the part open

* A very curious case of imperforate rectum is recorded in the *Memoirs of the Life and Writings of the late Dr. Lettsom*, published by my friend Mr. Pettigrew. Sir T. Cullum, in one of his letters, (letter 30,) mentions a child "who lived fifty-four days with an imperforate rectum. Notwithstanding the child lived so long, the intestines were not mortified, and scarcely inflamed; the fæces quite liquid, of a good colour; and not the least appearance of meconium."

by the occasional introduction of a slender bougie. The more common malformation of this part, however, is that of the urinary passage terminating by a small aperture at a little distance below the glans, and sometimes on one side of it. In these cases, the precise circumstances must determine the propriety of any operation; which, if not judiciously managed, may render the case worse than it was. I recollect two, indeed, in which I was able to do considerable service, one of which was in the presence of the late Sir Cæsar Hawkins, and the other of the late Dr. Hunter; in the latter, the urine was discharged from one side of the penis, and pretty low down which was very happily remedied.

There are other malformations of this part, by which it is drawn downwards, or to one side; the peculiar circumstances of which must point out the nature of the operation most likely to afford relief. This will generally consist in a simple incision of the skin where it may happen to be too tight or short, and keeping the divided edges at a distance from each other, till the whole sore shall be healed; or sometimes by dividing the upper part of the prepuce, as in the paraphymosis.

THE EARS IMPERFORATE.

I have likewise known the ears to be imperforate, a case that admits of no remedy; but the external appearance may sometimes be improved, when the helix is turned forwards over the tragus, covering that part which ought to lead to the internal ear: but in these cases I have always found the concha, and meatus auditorius, totally obliterated.

SQUINTING.

Another, and a very common blemish, is that called squinting, which is sometimes contracted by very young infants, and may then frequently be remedied, especially if confined to one eye; but if a child be born with this deformity, or if it be consequent to fits, it is not so likely to be removed. The means I have to recommend are indeed very simple. A very

important one, however, is to apply a piece of sticking-plaster spread on some bright-coloured silk, in such a position, either on the temple, or the nose conformably to the side on which the eye is distorted, as may attract it in the contrary way. In order to keep up this allurements, the colour of the silk ought to be varied from time to time, as well as its situation, placing it a little higher or lower, both for the sake of change, that the skin may not be fretted, as well as to answer any other end, that a due observation on its effects may point out. Besides this, the child ought always to be placed with that side towards the light from which the eye is distorted; and for the like reason, its parents, nurse, play-things, and every other object that can attract its notice, should as constantly as possible be on the same side, that the child may have every inducement its age and circumstances will allow, to draw the eye the right way, and by early habit counteract a muscular action that has not yet become permanent.

Another method more proper for older children, is covering the eyes with ogles, which are glasses fixed in a little case, such as many people wear when they ride on horseback. They must be so placed that the child can see no object but by turning the eyes to the sides from which they are distorted. Or an opaque covering of a similar form may be worn, with only a very small aperture in the centre, by which the child will be obliged to look straight forward. It is scarcely necessary to add, that these contrivances must be worn constantly till the bad habit shall have been overcome.

Where the cast is confined to one eye, it has been recommended to cover the other; whereby the infant will in a little time acquire the habit of directing the affected one more properly. After this, the sound eye should be gradually uncovered, so as to admit the light by degrees. The child, it is said, will by this means very soon be enabled to direct both eyes properly to the same object.

To this end, likewise, such children may be made to look at their own eyes in a mirror for a few minutes several times a day; but with the precaution that each eye be directed to that which corresponds with it in the glass; contriving, some-

wise, to render this remedy a kind of amusement. I shall only add on this head, that children who are inclined to squint ought not to be exposed to a very strong light, nor learn to read very young.

A great improvement in the removal of this distortion has been effected in modern surgery, by division of the muscles of the eye. "The success has been in cases of internal or converging squinting, complete, although some few have given much trouble. There is scarcely a case which is not curable. The operation may be done with the greatest safety, and without fear of any evil consequences, in less than half a minute, and every surgeon possessing a reasonable share of information on these points will be able, after having once seen it done to do it as well, to say the least of it, as I can. 340 cases were operated on for internal or converging squinting, and 16 for external or diverging squinting."—Report of the operations for the cure of squinting, performed at the Royal Westminster Ophthalmic Hospital, Nov. 1840. By Charles W. G. Guthrie, jun.

VARI AND VALGI.

These are distortions of the feet, and differ only with respect to the side to which the foot is turned; in the former, the soles of the feet being turned inwards, and in the latter outwards; the curative intention is therefore alike in both. The complaint is sometimes very trifling, and seems to have been owing only to some cramped position in utero, and in that case, disappears before the end of the month. In other instances, there is evidently a contraction if not accurtation, of the tendons, which calls for considerable attention. The remedy, however, is obvious enough, and frequently consists only in the proper application of a roller and pasteboard splints, so as gradually to bring the foot into its natural position; and in proportion as it inclines thereto, increasing the force, and tightening the roller every two or three days.

There is also another very common distortion of the feet, in which they are turned upwards towards the instep; but the

mode of treatment is alike in them all, and the cure will usually be effected in a reasonable time. The like easy means will generally be sufficient to remedy a contraction of the joints of the fingers, and various awkward positions of the toes, with which some infants come into the world.

All these complaints may, nevertheless, be sometimes more considerable, especially if neglected; for in the same manner as the tendons of the muscles are affected, the ligaments which unite the bones of the tarsus to each other, and to the lower end of the tibia and fibula, will be found in a state of unequal tension, and eventually the bones themselves will become more or less misshapen and deformed.

[In the treatment, our object must be gradually to extend the muscles whose shortness or inordinate contraction produces the distortion, and as far as possible to encourage the action of their antagonists. For this purpose the shoe proposed by Professor Colles, of Dublin, in the first volume of Dublin Hospital Reports, to which we refer as to its form and mode of application, is by far the most useful of any we have seen; the facility of its application and adjustment we have found increased by having the lateral splints fastened to the sole by hinges, instead of tenants and mortices. In the more aggravated cases the operation of tendotomy supersedes most happily the continued use of instruments. See Dr. Little, Treatise on the Nature of Club-foot and Analogous Distortions.—H. D.]

Other imperfections might be noticed, which either remediable by obvious means, to be adapted, according to particular circumstances, by the persons attending, or happily remedy themselves in a little time. Among the former, I shall, however, mention one, which being new to other gentlemen, who were consulted as well as myself, its favourable termination afforded peculiar satisfaction.

The subject of this, besides a slight degree of varus in one foot, had a contraction of the leg and thigh on that side; so that the heel and foot were drawn back towards the nates, and the knee drawn up to the abdomen. In this position the infant seemed to be easy, but to suffer great pain when the limbs were forced into the same extended position with the

others; for it never stretched them out itself for upwards of three weeks. Two or three consultations were held during the month, and it was thought by one gentleman, that the glutæi muscles were a little swollen; but this fulness was not very evident. Oily embrocations, a blister, leeches, and the semicupium were had recourse to, of which the two latter were probably the most useful; but it was not until they had been several times employed, that the infant was observed to straighten the limb, and at first, only now and then; but a few days afterwards it moved it as freely as the other. When the presentation of the child at the birth is that of the *nates*, such a contraction of the limbs as that above described is very common, and yields in a few days to moderate friction.—S. M.

As a matter of curiosity and novelty to the young reader, I shall close this part of my subject with briefly noticing certain peculiarities respecting the eyes and hair: (some of which have likewise been laid to the charge of the imagination.) The latter sometimes changes more than once to opposite colours; hair, for instance, of an unusually light colour, has, at the age of three or four years, changed in a short time to a very dark brown; and the child, in consequence, has not been recognised by those who had not seen it for several months. I have seen as great an alteration take place in the opposite respect, which is certainly less common, and in one family in all the children; the hair, from a very dark colour becoming exceedingly light, and in one, very white while under two years of age. And the mother of these children was herself born with very dark hair, which, when she was about five years old, became very white, (as her own mother informed me,) and is now again changed to full as dark a colour as at her birth. Accounts of a similar change in the colour of the eyes are, I believe, not well founded; at least, I have never noticed it myself, nor heard of any such change upon good authority; though the eyes of infants have been thought to become darker than they were

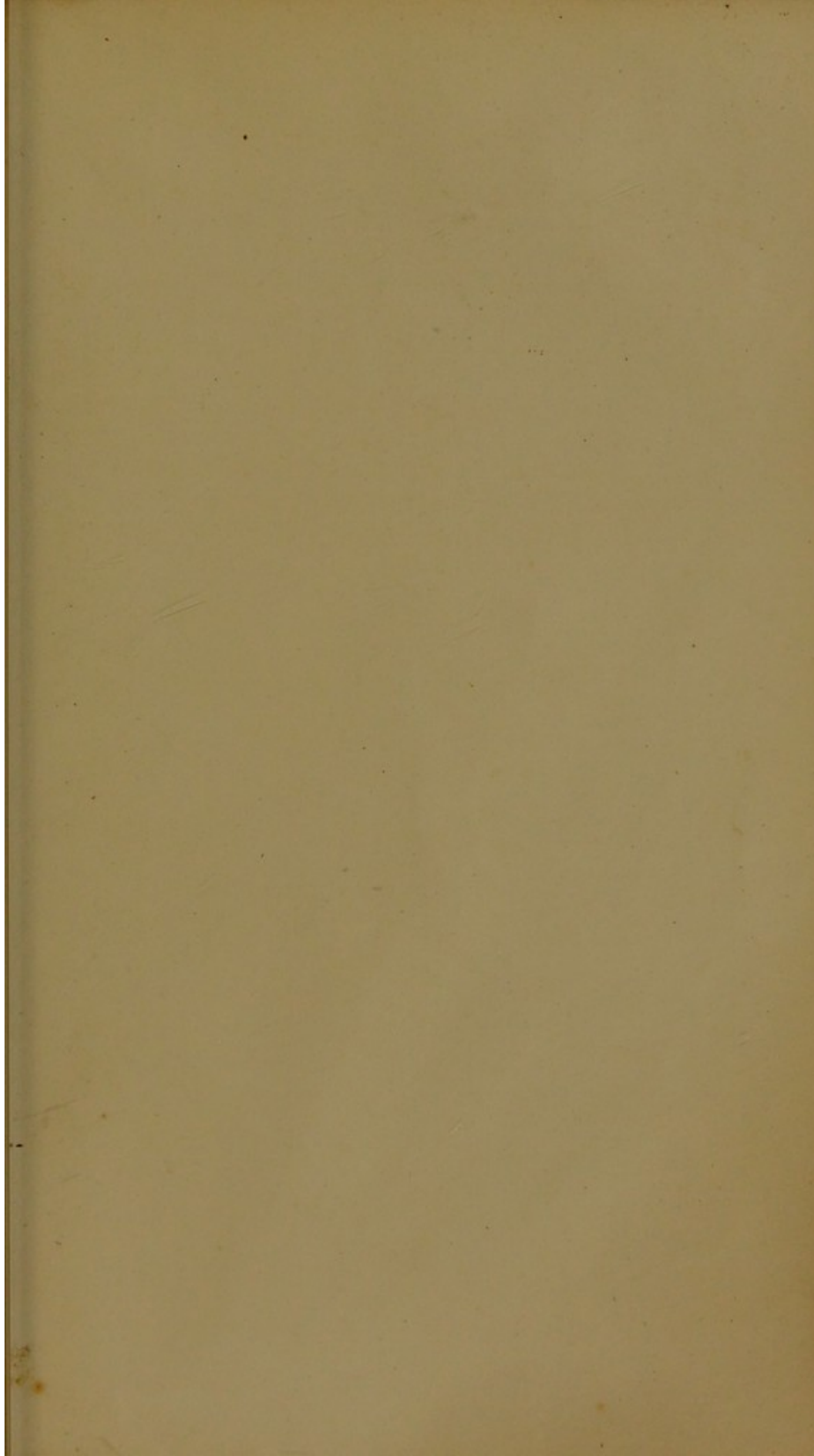
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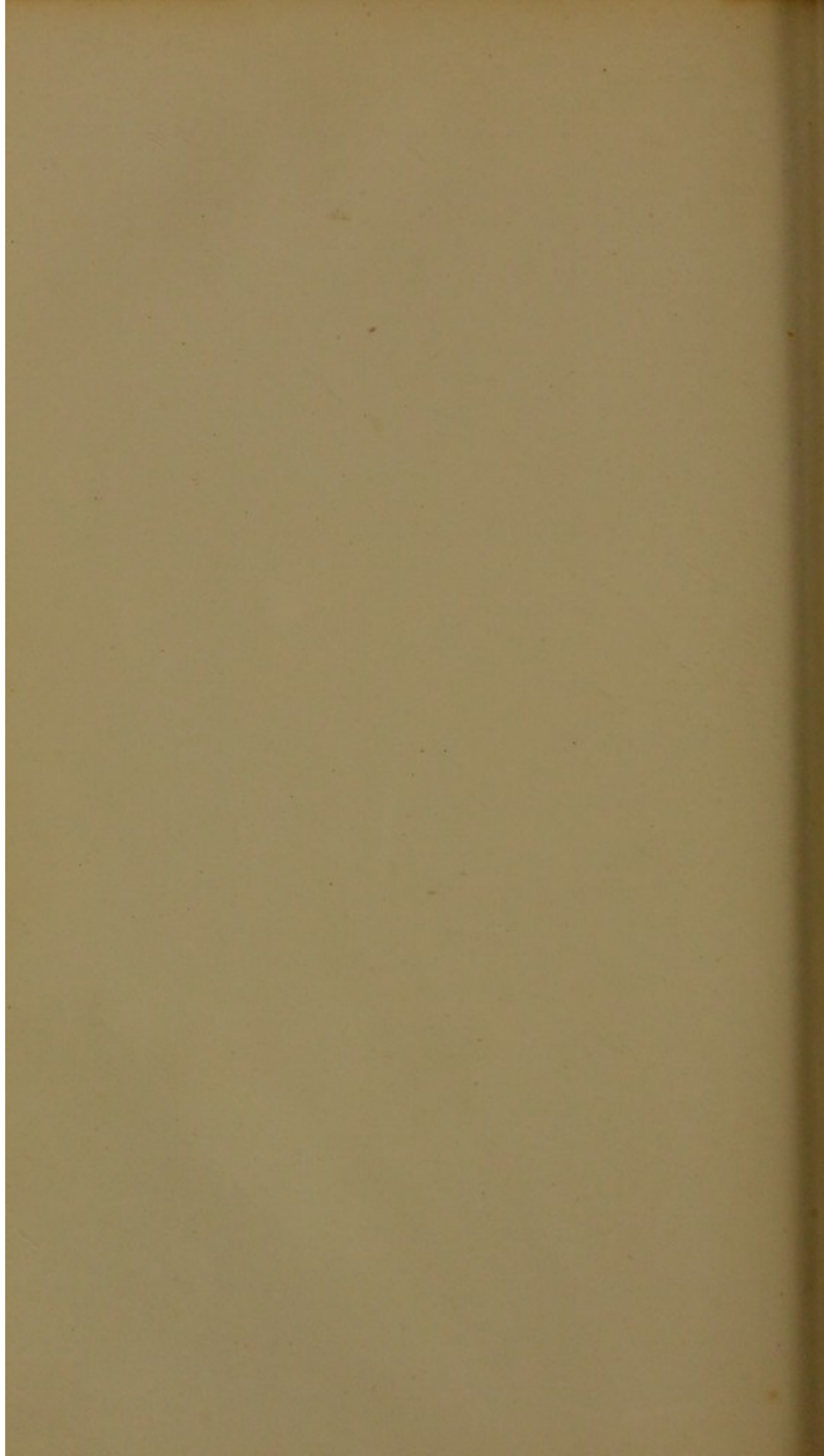
conceived to be at their birth. But there are instances of infants born with the eyes of different colours, as well as the hair on the head; and in both the colour is permanent. Sometimes only one lock of the hair has varied from the rest; but I have seen two instances of the one half being red, (as it is termed,) and the other half, in one instance, black, and in the other, white. In the latter, the white part was exceedingly bright, soft, and of a silky texture, unlike that of hair, but feeling like undressed, or raw silk, and no wise differing from that of the Albino. Of albinism, I have known two instances in this country, the other children of the same parents having, the one, brown, and the other, black, hair.

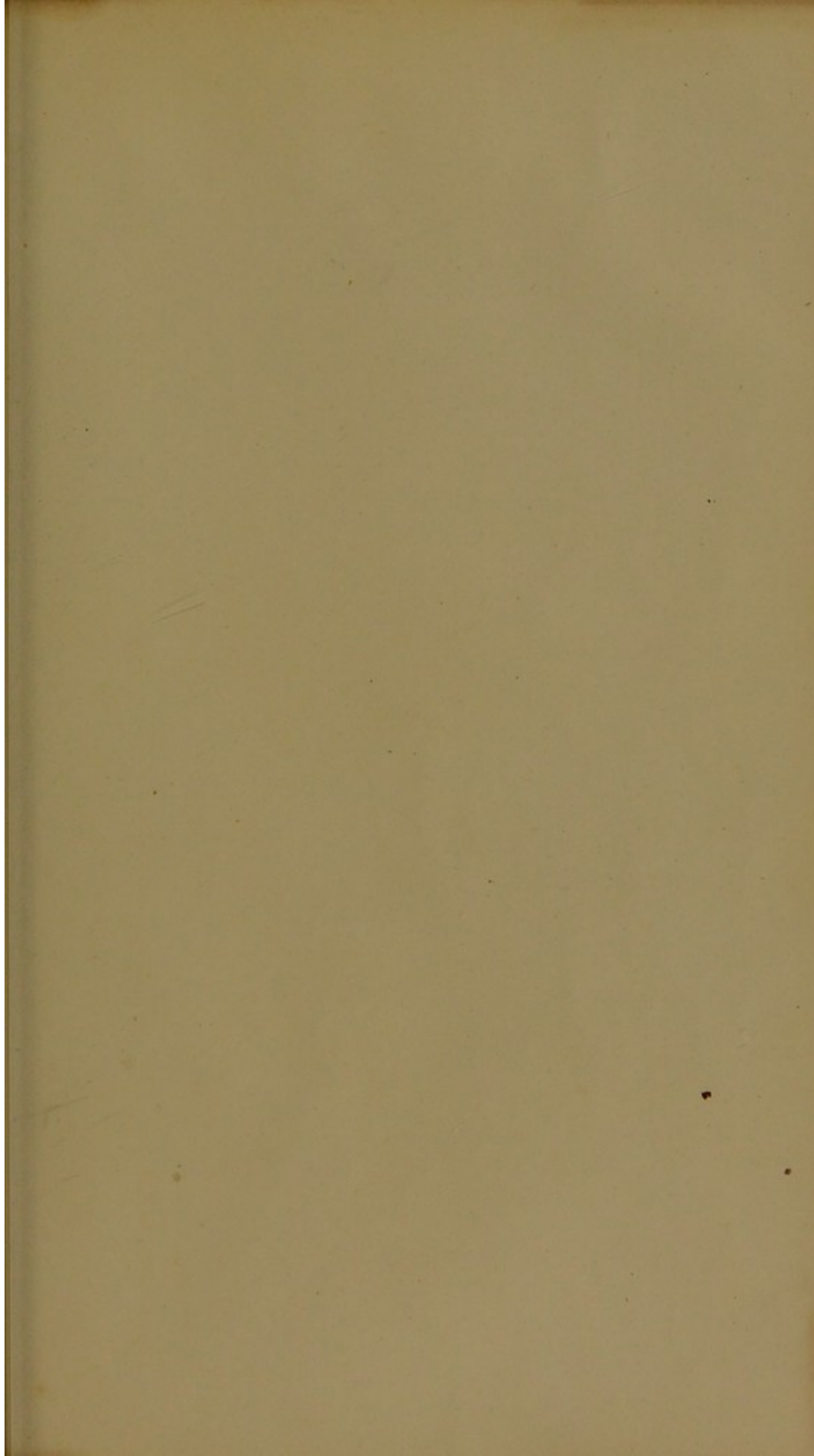
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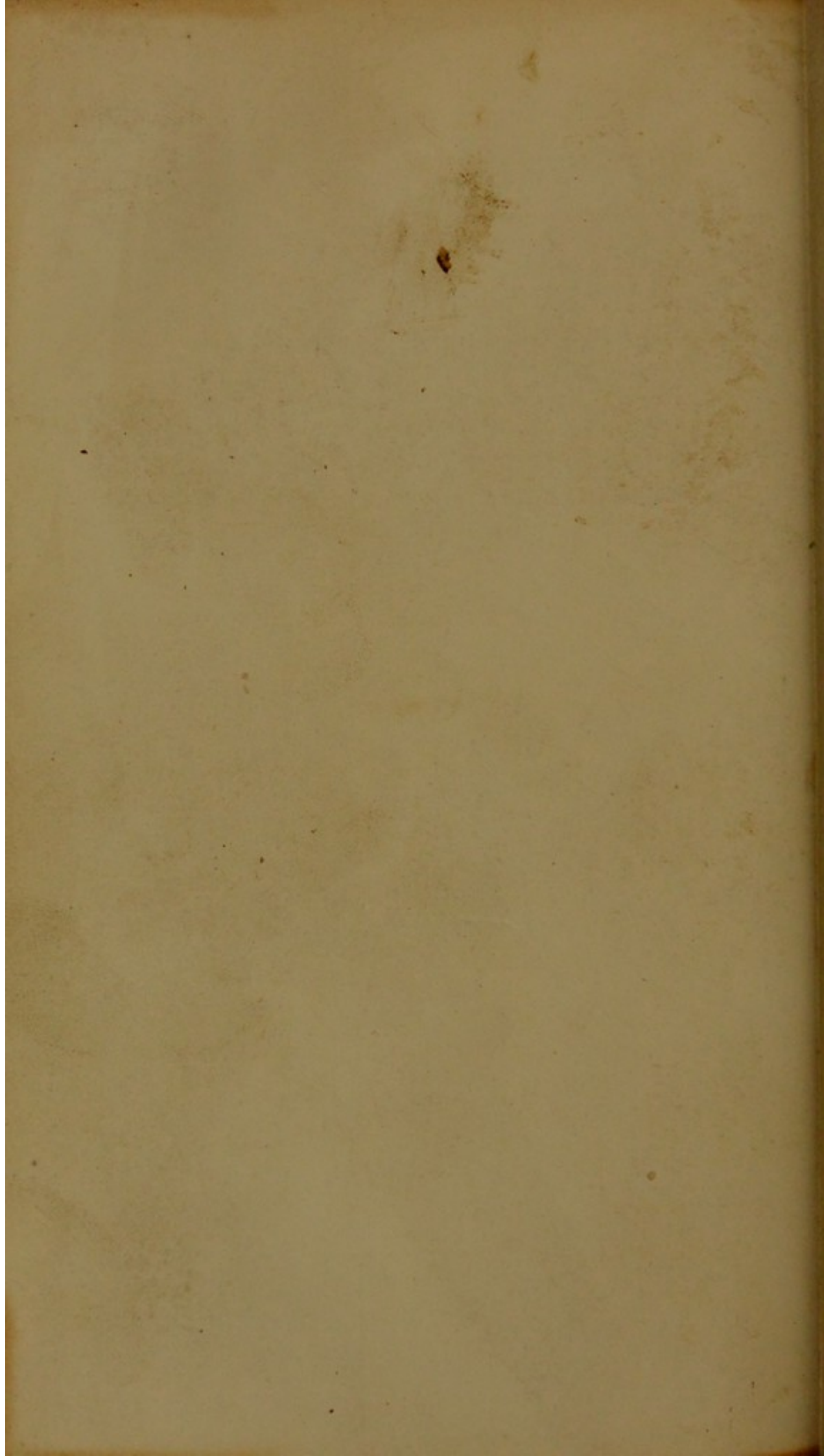
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